



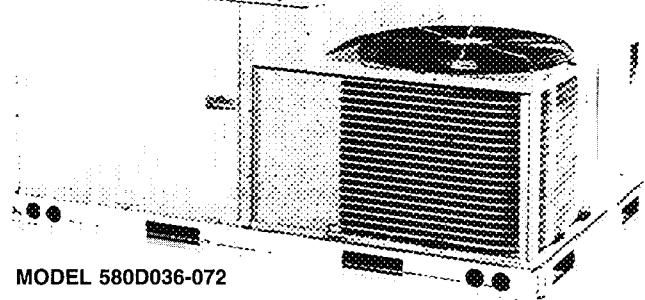
**Bryant**  
Air Conditioning

**COMMERCIAL  
SINGLE PACKAGE ROOFTOP  
GAS HEATING/ELECTRIC COOLING UNITS**

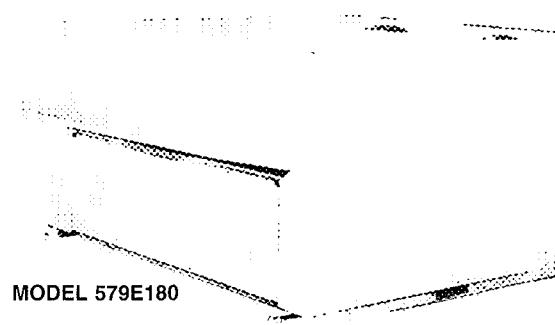
**Model 579E/579F/580D**

**Sizes 036-300**

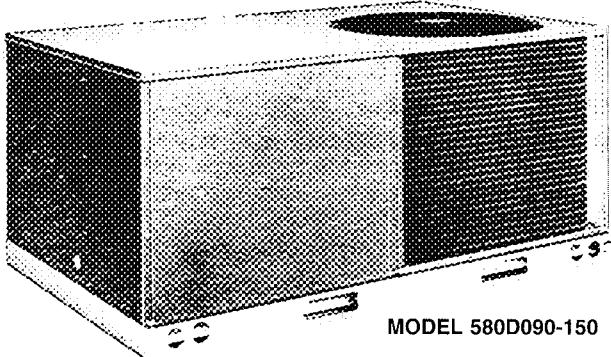
3 to 25 Tons



MODEL 580D036-072



MODEL 579E180



MODEL 580D090-150

### DESCRIPTION

The 579/580 gas heating/electric cooling rooftop units are designed to deliver optimum performance and reliability in a commercial rooftop unit.

The 3 to 25 ton units are one-piece gas heating, electric cooling units that are prewired and precharged with R-22 at the factory, making jobsite installation easy. Every unit is factory run-tested prior to shipment to ensure reliable installation.

The 579/580 units are designed to be field-convertible from vertical supply/return to horizontal supply/return (180-300 units require an accessory horizontal supply curb), making them easily adaptable to a wide variety of new construction and replacement applications. For vertical supply/return jobs, ductwork can be connected directly to the roof curb, allowing ductwork to be completed before unit is available for installation. All units include easily replaceable internal filters.

The 579/580 units are available in a range of heating sizes and voltage options to meet most job requirements. Low-voltage terminal blocks make wiring connections quick and simple.

All units are listed with either UL (Underwriters' Laboratories) or ETL Laboratories and with either CSA (Canadian Standards Association), ULC (Underwriters' Laboratories Canada), or Warnock Hersey. All units are ARI (Air-Conditioning & Refrigeration Institute) approved (except the 300 unit, which is beyond the scope of the ARI certification program) and comply with ASHRAE Standard 62 (American Society of Heating, Refrigeration, and Air Conditioning Engineers).

### STANDARD FEATURES

**HIGH-EFFICIENCY DESIGN** means cooling and heating energy savings. Standard units have EERs (energy efficiency ratios) of up to 8.9 and SEERs (seasonal energy efficiency ratios) of up to 9.70 (036-060 only). The 580D units have an AFUE (Annual Fuel Utilization Efficiency) rating of 80% with a California Seasonal Efficiency rate of 75.8% or better. All 579/580 units have a steady-state efficiency of 80%.

**THE FACTORY-ASSEMBLED PACKAGE** is a compact, fully self-contained electric cooling unit that is prewired, prepiped, and precharged for minimum installation expense.

**UNITS MAY BE CONVERTED TO HORIZONTAL DISCHARGE** in the field. The units can be modified at the jobsite to fit a variety of applications (180-300 units require the accessory horizontal supply/return adapter curb assembly).

**INTERNAL RETURN-AIR FILTERS** are provided. Two-in throwaway filters are provided standard on all units, and can be easily accessed through the filter access panels. There is no need to field-fabricate filter racks or install external filter accessories.

**COMPRESSOR PROTECTION** is assured, since each compressor is protected with current and temperature sensitive overload. The 036-150 units have internal high-pressure, loss-of-charge, and freeze protection, and the 180-300 units have high- and low-pressure protection external to the compressor. These protections prohibit operation at abnormal compressor pressures or inadequate charge in the refrigerant circuit.

**DUAL COMPRESSORS AND DUAL REFRIGERATION CIRCUITS (090-150 and 216-300 units)** are provided. Two compressors, each on its own independent circuit, provide standby reliability and high operating efficiency.

**POWER, CONTROL, AND GAS CONNECTIONS** are made on the same side of the unit to simplify installation.

**INDUCED-DRAFT COMBUSTION** provides the exact amount of combustion air for the most efficient operation. Induced-draft combustion also eliminates the flue stack, giving the unit a low profile appearance. The draw-through design ensures safe operation under any conditions.

**DIRECT-SPARK IGNITION SYSTEM (036-150)** saves operating expense by eliminating inefficient standing pilot ignition and unnecessary service calls.

**INTERMITTENT SPARK IGNITION (180-300)** eliminates the standing pilot flame that consumes gas when the furnace is shut down. The pilot is ignited only when the thermostat calls for heat.

**TUBULAR U-SHAPED CELL** design of the heat exchanger provides high-efficiency heating operation. The hot gases make 2 passes over the supply-air path.

**POSITIVE-PRESSURE MECHANICAL FLUE GAS VENTING** is unaffected by adverse wind conditions.

**FURNACE SAFETY CONTROLS** shut off gas if there is a burner (036-150) or pilot (180-300) outage, combustion-air failure, overheating of heat exchangers, or flame rollout.

**TWO-STAGE HEATING WITH 2 INDEPENDENT GAS CONTROL SYSTEMS (high-heat and all 120-300 units)** minimizes heating costs. These independent gas control systems make single-stage heating possible if one stage fails.

**INTEGRATED GAS UNIT CONTROLLER BOARD** on the 036-150 units makes the control of gas heating rooftop units more reliable, safe, and efficient. The board provides timed control of evaporator-fan functions and ignites the burners. The board also simplifies troubleshooting through its built-in diagnostic function which provides system status and fault notification via a light-emitting diode (LED).

**ADVANCED DESIGN** of evaporator and condenser coils provides optimum heat transfer and cooling efficiency. Coils are computer-designed with advanced heat transfer surfaces, and are fabricated of copper tubing with aluminum fins.

**COMMERCIAL STRENGTH BASE RAILS (full-perimeter on 036-150 units)** with built-in rigging capability allow easy rigging of unit.

**WEATHER-RESISTANT CABINET** is built for durability in any climate. The cabinet is made of pre-painted, galvanized steel for long life and high-quality appearance.

**LOW-AMBIENT OPERATION** is provided standard. The 036-150 units and the 216 and 240 units operate in cooling down to 25 F as shipped from the factory. Low-ambient kits are not required for most applications.

**HERMETICALLY-SEALED COMPRESSORS** on the 036-150, 216, and 240 units prevent contamination to help promote longer life and dependable operation. The 180 and 300 units have semi-hermetic compressors.

**COMPRESSOR VIBRATION ISOLATION MOUNTING** on all units eliminates noise-causing vibration transmission into the conditioned space.

**CRANKCASE HEATERS** on the 180 and 300 units keep the oil free of refrigerant during the off cycle for added compressor life and reliability. Crankcase heaters are not required on 036-150 and 216 and 240 units.

**STANDARD WARRANTIES** include 1 year on parts (no labor), with an additional 4 years on compressors (036-180 units) and heat exchangers (all units). See Trade Price Sheets for additional extended warranties.

## FACTORY-INSTALLED OPTIONS DESCRIPTION AND USAGE

**Economizer** — The economizer will allow a fixed percentage (between 0 and 100%) outdoor ventilation air into the unit any time the evaporator fan is running. A dry-bulb thermostat placed outdoors will bring in 100% outdoor air whenever the temperature of the outdoor air alone will adequately provide cooling. If the economizer alone cannot provide enough cooling, then simultaneous economizer and compressor operation will provide the most economical operation.

### SUGGESTED USE

- To allow a fixed percentage of outdoor air any time the evaporator fan is on, or operates in economizer mode if outdoor

air can provide cooling, but closes when the evaporator fan is off to prevent cold backdrafts and wasted energy.

- To reduce energy usage. Use whenever the number of hours of operation at below 55 F is significant.
- The damper may be used on either vertical or horizontal applications.

**25% Manual Outdoor-Air Damper** — Package consists of a sliding damper which can be set at any position between 0 and 25% outdoor air. The package includes a rainhood and bird-screen.

### SUGGESTED USE:

- To allow a fixed percentage of outdoor air for ventilation under all conditions.
- The damper may be used on either vertical or horizontal applications.

**Alternate Evaporator-Fan Motors and Drives** — Alternate motors and drives allow operation of the evaporator fan at conditions outside the range of the standard factory motor.

### SUGGESTED USE:

- When higher static/airflow is required to meet job conditions

**Filter Access Door Panel Kit (036-150)** — Door panel replaces the standard filter access panel to provide filter access and replacement without tools.

### SUGGESTED USE:

- Required with manual outdoor-air damper, two-position damper, and economizer accessories, and for filter access without tools on 036-150 units.

**NOTE:** This is not necessary for the 180-300 units.

**Controls Upgrade Kit (036-150)** — The controls kit includes high pressure, loss-of-charge/low-pressure, and freeze protection cutout switches. The high-pressure and loss-of-charge/low-pressure switches can be easily added by screwing the switches onto Schrader-type fittings provided on the refrigerant lines.

### SUGGESTED USE:

- Kit provides additional protection against system high-pressure, loss-of-charge/low-pressure, and evaporator coil frost build-up for 036-150 units

**NOTE:** These switches are standard on the 180-300 units.

**Condenser Coil Grille (036-150)** — The grille protects the condenser coil from damage and requires no additional clearance.

### SUGGESTED USE:

- When 036-150 unit is located in high traffic areas or could be subject to damage

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## FIELD-INSTALLED ACCESSORY DESCRIPTION AND USAGE

**Roof Curb** — Full-perimeter galvanized steel support frame in 14- and 24-in high designs provides wood nailing to attach roof counter flashing. Insulated basepans in curb are provided to prevent condensation. Ductwork attaches to rails provided in the roof curb. A gasket is provided to form an air- and watertight seal between unit and curb. The gasket meets the standards of the NRCA (National Roofing Contractors' Association).

**SUGGESTED USE:**

- Rooftop application for vertical discharge.
- Slab-mounted applications when elevation of the unit is necessary.

**Utility Connection Package (036-150)** — Connection plates for gas, power, and control wires which attach to the roof curb, allowing the gas, power, and control wires to be routed through the roof curb.

**SUGGESTED USE:**

- To minimize the number of roof penetrations when using 036-150 units

**NOTE:** Utility connection plates are not required on 180-300 units.

**Condenser Coil Hail Guard (036-150)** — Package consists of a hood and coil grille which attach to the condenser coil.

**SUGGESTED USE:**

- To protect the condenser coil from hail and other debris on 036-150 units.

**Filter Access Door Panel (036-150)** — See description listed under Factory-Installed Options Description and Usage section on page 2

**25% Manual Outdoor-Air Damper (036-150)** — See description listed under Factory-Installed Options Description and Usage section on page 2

**NOTE:** Accessory filter access door panel is required for 036-150 units.

**Two-Position Damper** — Package consists of a low-leak damper assembly. The damper will allow from 0 to 25% outdoor air into the unit any time the evaporator fan is running. When the evaporator fan is off, the damper will be closed.

**SUGGESTED USE:**

- Allows a fixed percentage of outdoor air any time the evaporator fan is on, but closes when the evaporator fan is off to prevent cold backdrafts and wasted energy.
- The damper may be used on either vertical or horizontal air-flow applications.

**Economizer** — See description listed under Factory-Installed Options Description and Usage section on page 2

**NOTE:** Accessory filter access door panel is required for 036-150 units.

**LP (Liquid Propane) Kit (036-150)** — Kit consists of gas orifices to convert the unit for use with LP gas. No gas valve modification is required.

**SUGGESTED USE:**

- When natural gas cannot be obtained for 036-150 units

**Thermostats and Subbases** — Provide staged cooling and heating, automatic (or manual) changeover, fan control, and indicator light.

**SUGGESTED USE:**

- To control unit operations.

**Solid-State Enthalpy Control** — Package consists of a solid-state sensor which is capable of sensing outdoor-air heat content (temperature and humidity) and controlling economizer cut-in point to have minimum heat content air passing over the

evaporator coil. The solid-state enthalpy control replaces the standard dry-bulb thermostat in the economizer.

**SUGGESTED USE:**

- To enhance economizer operation for additional energy savings.

**Differential Enthalpy Control** — Package consists of a solid-state sensor to be used in conjunction with the solid-state enthalpy control. This sensor is mounted on the economizer assembly so that it can sense building return-air temperature. The 2 sensors will determine which combination of outdoor and return air will provide the greatest energy savings.

**SUGGESTED USE:**

- To enhance economizer operation for maximum energy savings.

**Time Guard® II Device** — Package consists of a control to be field wired into the unit controls, and provides a 5-minute delay in compressor operation between cooling cycles.

**SUGGESTED USE:**

- Prevents compressor short cycling when rapid compressor cycles may be a problem

**Controls Upgrade Kit (036-150)** — See description listed under Factory-Installed Options Description and Usage section on page 2

**Outdoor-Air Thermostat (180 and 300)** — Kit consists of an outdoor-air thermostat that permits cooling operation at low outdoor-ambient temperatures. Refer to Minimum Ambient Temperature Cooling Operation table on page 47 for more details.

**NOTE:** The outdoor-air thermostat is not necessary for 036-150, 216, and 240 units.

**SUGGESTED USE:**

- When cooling at low-ambient outdoor temperatures is desired

**Low-Ambient Kit** — Kit consists of a solid-state control and condenser coil temperature sensor to cycle the condenser-fan motors in order to maintain condenser-coil head pressure for proper cooling operation.

**SUGGESTED USE:**

- Whenever cooling is required at low outdoor ambient temperatures (down to -20 F)
- Low-ambient kit is not usually required when economizer is used

**Retro Power Pack (036-150)** — Package consists of emergency power supply, relays, and barometric relief damper hoods.

**SUGGESTED USE:**

- To provide automatic closing of economizer damper upon building power loss for 036-150 units.

**Low NO<sub>x</sub> Kit (036-150)** — Consists of baffles to be inserted in the heat exchanger tubes to reduce the level of nitric oxide emissions to 40 nanograms per joule

**SUGGESTED USE:**

- To meet local NO<sub>x</sub> emission standards for 036-150 units.

**Flue Hood Protector (036-150)** — Consists of a sheet metal shield to go over the gas flue exhaust

**SUGGESTED USE:**

- If additional protection from hot flue hood is required — for example, if 036-150 unit is slab-mounted near a driveway.

**Condenser Coil Grille (036-150)** — See description listed under Factory-Installed Options Description and Usage section on page 2.

## FIELD-INSTALLED ACCESSORY DESCRIPTION AND USAGE (cont)

**Barometric Relief Package (180-300)** — This package is useful when it is necessary to remove excess pressure from the conditioned space.

**NOTE:** Optional economizer is required.

### SUGGESTED USE

- When the job requires the ability to relieve internal building pressure on 180-300 units.

**Power Exhaust Package (180-300)** — This package is useful when it is necessary to remove excess pressure from the conditioned space.

**NOTE:** Optional economizer is required.

### SUGGESTED USE

- When the job requires the ability to relieve internal building

pressure and pressure losses through the return-air ductwork are greater than 0.20 in. wg on 180-300 units.

- When the job requires the ability to move large quantities of air to relieve pressure in the conditioned space on 180-300 units.

**Horizontal Supply Curb (180-300)** — The curb is prefabricated, easily field-assembled, and permits full perimeter mounting. Curbs can be installed at the jobsite before unit is installed, eliminating a major leak source.

### SUGGESTED USE:

- Rooftop application for horizontal discharge on 180-300 units.

### MODEL DESCRIPTION (ODS Model Number)

580D	E	V	090	180	C	B	Evaporator-Fan Motor Options	
579E/579F/580D — Single Package High-Efficiency Gas/Electric Unit							A — Standard Motor and Drive	B — Alternate Motor and/or Drive
<b>Voltage Designation</b>							<b>Factory-Installed Outdoor-Air and Other Upgrade Options</b>	
B — 230-1-60							A — Standard Unit	
E — 460-3-60							C — Economizert	
J — 208/230-1-60*							H — Manual Dampert	
P — 208/230-3-60							M — Economizert, Controls Upgrade Package**, and Condenser Coil Grille	
T — 575-3-60							N — Manual Dampert, Controls Upgrade Package**, and Condenser Coil Grille	
<b>Fuel and Control Type</b>							T — Filter Door Access Panel, Controls Upgrade Package, and Condenser Coil Grille	
V — Natural Gas/Direct Spark Ignition							<b>Gas Heat Input (Btuh)</b>	
W — Natural Gas/Electric Relight Pilot							074 — 74,000	220 — 220,000
<b>Nominal Tons</b>	090	— 7 1/2	180	— 15			115 — 115,000	231 — 231,000
036 — 3	102	— 8 1/2	216	— 18			125 — 125,000	250 — 250,000
048 — 4	120	— 10	240	— 20			150 — 150,000	270 — 270,000
060 — 5	150	— 12 1/2	300	— 25			180 — 180,000	485 — 485,000
072 — 6								

### LEGEND

**ODS** — Order Distribution System

\*The 580D060 single-phase unit is available in 230 v only.

†Includes filter access door panel

\*\*Contains high-pressure, loss-of-charge/low-pressure, and freeze protection cutout switches (036-150 only)

**NOTE:** Refer to Trade Price Sheets for specific information regarding which options are available on which units.

## HEATING CAPACITIES AND EFFICIENCIES, 036-150 UNITS

UNIT 580D	HEATING INPUT (Btuh) Stage 2/Stage 1	OUTPUT CAPACITY (Btuh)	TEMPERATURE RISE (F)	AFUE (%)	STEADY-STATE EFFICIENCY (%)	CALIFORNIA SEASONAL EFFICIENCY (%)
036074	74,000	59,200	25-55	80	80	77.2
036115	115,000/82,000	92,000	55-85	80	80	76.7
048074	74,000	59,200	25-55	80	80	77.2
048115	115,000	92,000	35-65	80	80	77.1
048150	150,000/120,000	120,000	50-80	80	80	76.9
060074	74,000	59,200	25-55	80	80	77.2
060115	115,000	92,000	35-65	80	80	77.1
060150	150,000/120,000	120,000	50-80	80	80	76.9
072074	74,000	59,200	25-55	80	80	77.2
072115	115,000	92,000	35-65	80	80	77.1
072150	150,000/120,000	120,000	50-80	80	80	76.9
090125	125,000	100,000	20-50	80	80	75.8
090180	180,000/120,000	144,000	35-65	80	80	77.1
090220	220,000/180,000	176,000	45-75	80	80	77.1
102125	125,000	100,000	20-50	80	80	75.8
102180	180,000/120,000	144,000	35-65	80	80	77.1
102220	220,000/180,000	176,000	45-75	80	80	77.1
120180	180,000/120,000	144,000	35-65	80	80	77.1
120220	220,000/180,000	176,000	35-65	80	80	77.1
120250	250,00/200,000	200,000	40-70	80	80	76.4
150220	220,000/180,000	176,000	35-65	80	80	77.1
150250	250,000/200,000	200,000	40-70	80	80	76.4

### LEGEND

AFUE — Annual Fuel Utilization Efficiency

NOTE: NO<sub>x</sub> levels are 40 nanograms/joule with the accessory NO<sub>x</sub> reduction kit (036-150)

## HEATING CAPACITIES AND EFFICIENCIES, 180-300 UNITS

UNIT	HEATING INPUT (Btuh) Stage 2/Stage 1*	OUTPUT CAPACITY (Btuh)	TEMPERATURE RISE (F)	STEADY-STATE EFFICIENCY (%)
579E180231	231,000/115,500	185,000	25-55	80
579E180270	270,000/115,500	216,000	25-55	80
579E216270/579F240270	270,000/115,500	216,000	15-45	80
579F240485	485,000/242,500	388,000	35-65	80
579F300270	270,000/115,500	216,000	15-45	80
579F300485	485,000/242,500	388,000	35-65	80

\*All units are 2-stage heat.

## CAPACITY RATINGS

UNIT 580D	NOMINAL TONS	STANDARD CFM	NET COOLING CAPACITY (Btuh)	TOTAL kW	SEER*		EER	SOUND RATING (BelS)
					Belt Drive	Direct Drive		
036	3	1200	35,500	4.0	10.00	9.70	8.60	8.2
048	4	1600	48,000	5.4	10.00	9.70	8.60	8.2
060	5	2000	58,500	6.8	10.00	9.70	8.60	8.2

UNIT 580D	NOMINAL TONS	STANDARD CFM	NET COOLING CAPACITY (Btuh)	TOTAL kW	EER	SOUND RATING (BelS)	IPLV
072	6	2100	70,000	7.9	8.90	8.4	†
090	7½	2600	85,500	9.6	8.90	8.6	9.70
102	8½	3000	98,000	11.0	8.90	8.6	9.45
120	10	3500	116,000	13.0	8.90	8.8	9.75
150	12½	4500	142,000	16.0	8.90	8.8	8.85

UNIT 579	NOMINAL TONS	NET COOLING CAPACITY (Btuh)	TOTAL kW	EER	IPLV
E180	15	180,000	20.9	8.60	10.50
E216	18	194,000	22.8	8.60	8.20
F240	20	220,000	25.9	8.50	8.30
F300	25	268,000	31.2	8.50	8.40

### LEGEND

**ARI** — Air Conditioning and Refrigeration Institute  
**BelS** — Sound Levels (1 bel = 10 decibels)  
**EER** — Energy Efficiency Ratio  
**IPLV** — Integrated Part-Load Values  
**SEER** — Seasonal Energy Efficiency Ratio

\*Applies only to units with capacity of 65,000 Btuh or less.

†The IPLV only applies to two-stage cooling units

### NOTES:

Rated in accordance with ARI Standards 210/240-89 or 360-86 (for 150-240 units) and 270-84

Ratings are net values, reflecting the effects of circulating fan heat.

Ratings are based on:



**Cooling Standard:** 80 F db, 67 F wb indoor entering-air temperature and 95 F db air entering outdoor unit

**IPLV Standard:** 80 F db, 67 F wb indoor entering-air temperature and 80 F db outdoor entering-air temperature.

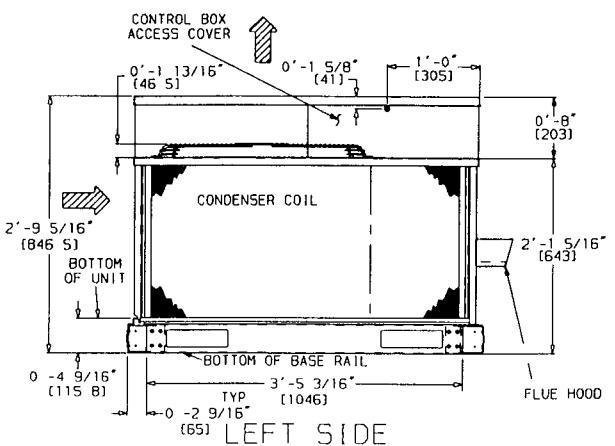
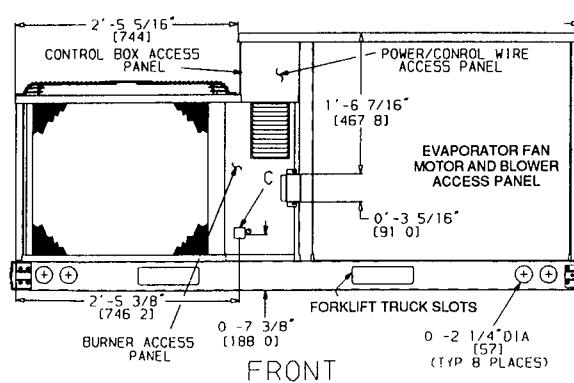
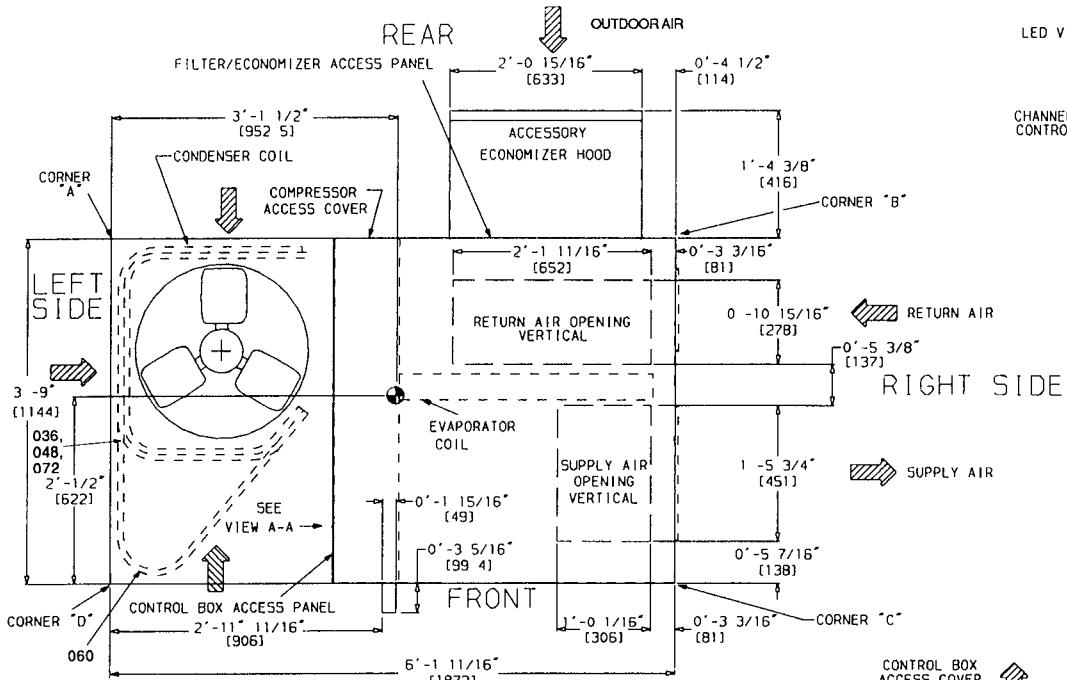
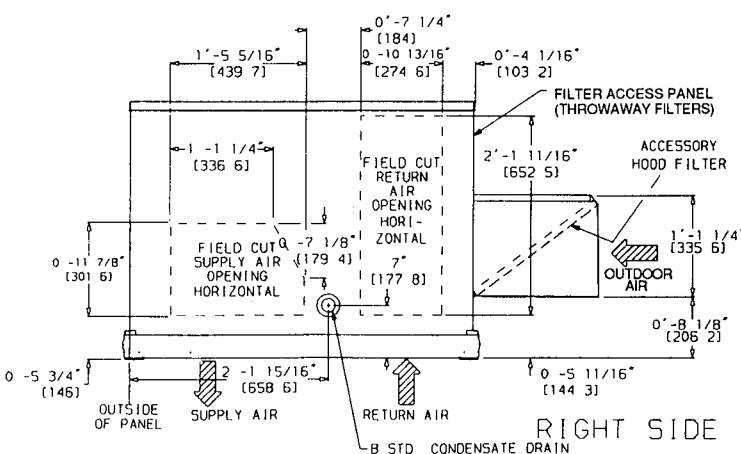
**DIMENSIONAL DRAWING — 580D036-072**

UNIT 580D	CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)	
	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg
036	140	63.5	105	47.6	159	72.1	56	25.4
048	142	64.4	106	48.1	162	73.5	60	27.2
060	150	68.0	115	52.2	160	72.6	65	29.5
072	165	75.0	136	61.7	200	90.7	64	29.0

CONNECTION SIZES	
A	1 1/16" Dia [27] Field Power Supply Hole
B	3/4"-14 NPT Condensate Drain
C	1/2"-14 NPT Gas Connection

**NOTES:**

- 1 Dimensions in [ ] are in millimeters
- 2  Center of gravity
- 3  Direction of airflow
- 4 On vertical discharge units, ductwork to be attached to accessory roof curb only. For horizontal discharge units, field-supplied flanges should be attached to horizontal discharge openings, and all ductwork should be attached to the flanges
- 5 Minimum clearance (local codes or jurisdiction may prevail):
  - a Between unit, flue side and combustible surfaces, 36 inches
  - b Bottom of unit to combustible surfaces (when not using curb) 1 inch. Bottom of base rail to combustible surfaces (when not using curb) 0 inches.
  - c Condenser coil, for proper airflow, 36 in one side, 12 in the other. The side getting the greater clearance is optional
  - d Overhead, 60 in. to assure proper condenser fan operation.
  - e Between units, control box side, 42 in per NEC (National Electrical Code)
  - f Between unit and ungrounded surfaces, control box side, 36 in per NEC
  - g Between unit and block or concrete walls and other grounded surfaces, control box side, 42 in per NEC.
  - h Horizontal supply and return end, 0 inches
- 6 With the exception of the clearance for the condenser coil and combustion side as stated in Note 5a, b, and c, a removable fence or barricade requires no clearance
- 7 Units may be installed on combustible floors made from wood or Class A, B, or C roof covering material if set on baserail



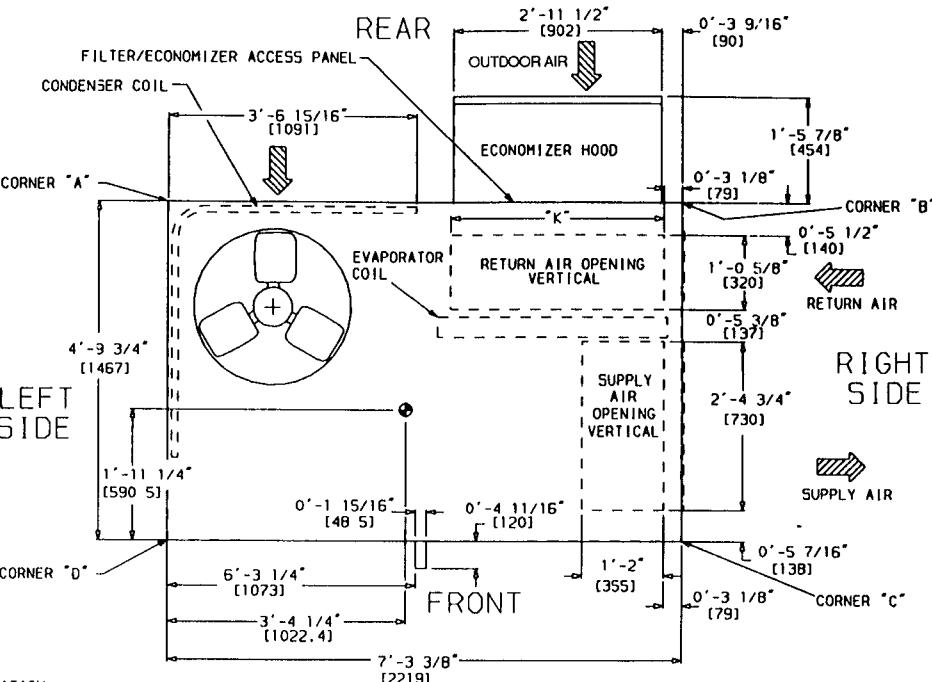
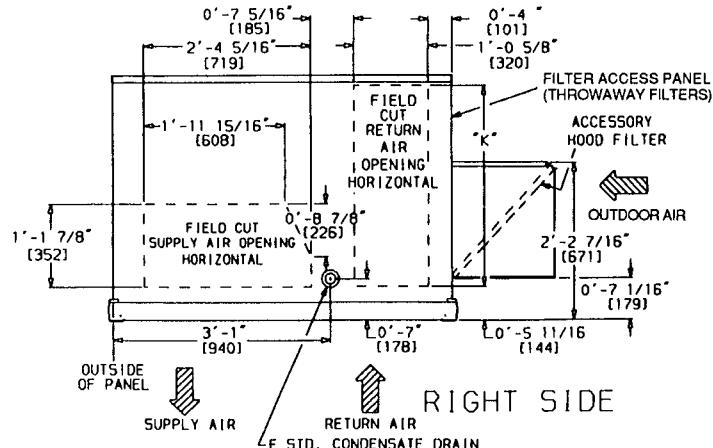
**DIMENSIONAL DRAWING — 580D090-150**

UNIT 580D	CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		"H"		"J"		"K"		"L"	
	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Ft-in.	mm	Ft-in.	mm	Ft-in.	mm	Ft-in.	mm
090	189	86	161	73	239	109	280	127	2-0 1/8	632	3-5 1/16	1050	2-9 11/16	856	2-2 1/16	672
102	191	87	163	74	242	110	284	129	1-2 1/8	378	3-5 1/16	1050	2-9 11/16	856	2-2 1/16	672
120	225	102	192	87	285	129	333	151	1-2 1/8	378	4-1 1/16	1253	3-0 1/16	924	2-10 1/16	875
150	228	103	195	88	289	131	338	153	1-2 1/8	378	4-1 1/16	1253	3-0 1/16	924	2-10 1/16	875

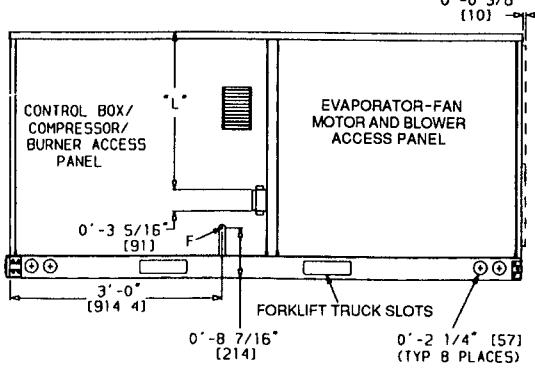
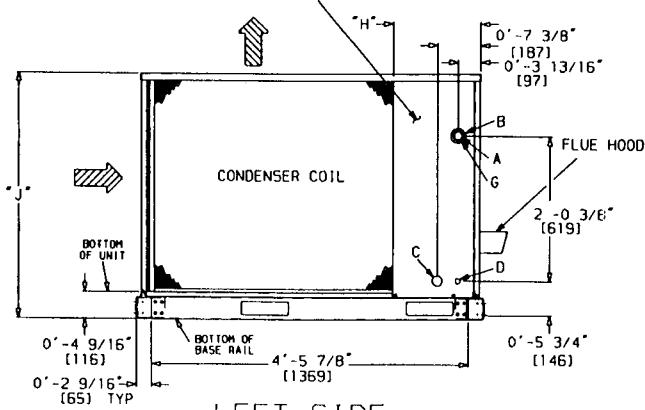
CONNECTION SIZES	
A	1 1/8" Dia [35] Field Power Supply Hole
B	2 1/2" Dia [64] Power Supply Knock-Out
C	1 1/4" Dia [44] Charging Port Hole
D	7/8" Dia [22] Field Control Wiring Hole
E	3/4"-14 NPT Condensate Drain
F	1/2"-14 NPT Gas Connection 580D090,102-125 3/4"-14 NPT Gas Connection, all others
G	2" Dia [51] Power Supply Knock-Out

**NOTES:**

- 1 Dimensions in [ ] are in millimeters
- 2  Center of gravity
- 3  Direction of airflow
- 4 On vertical discharge units, ductwork to be attached to accessory roof curb only. For horizontal discharge units, field-supplied flanges should be attached to horizontal discharge openings, and all ductwork should be attached to the flanges
5. Minimum clearance (local codes or jurisdiction may prevail):
  - a Between unit, flue side and combustible surfaces, 48 inches
  - b Bottom of unit to combustible surfaces (when not using curb) 1 inch. Bottom of base rail to combustible surfaces (when not using curb) 0 inches
  - c Condenser coil for proper airflow, 36 in one side, 12 in the other. The side getting the greater clearance is optional
  - d Overhead, 60 in to assure proper condenser fan operation
  - e Between units, control box side, 42 in per NEC (National Electrical Code)
  - f Between unit and ungrounded surfaces, control box side, 36 in per NEC
  - g Between unit and block or concrete walls and other grounded surfaces, control box side, 42 in per NEC
  - h. Horizontal supply and return end, 0 inches
- 6 With the exception of the clearance for the condenser coil and combustion side as stated in Note 5a, b, and c, a removable fence or barricade requires no clearance.
- 7 Units may be installed on combustible floors made from wood or Class A, B, or C roof covering material if set on baserail

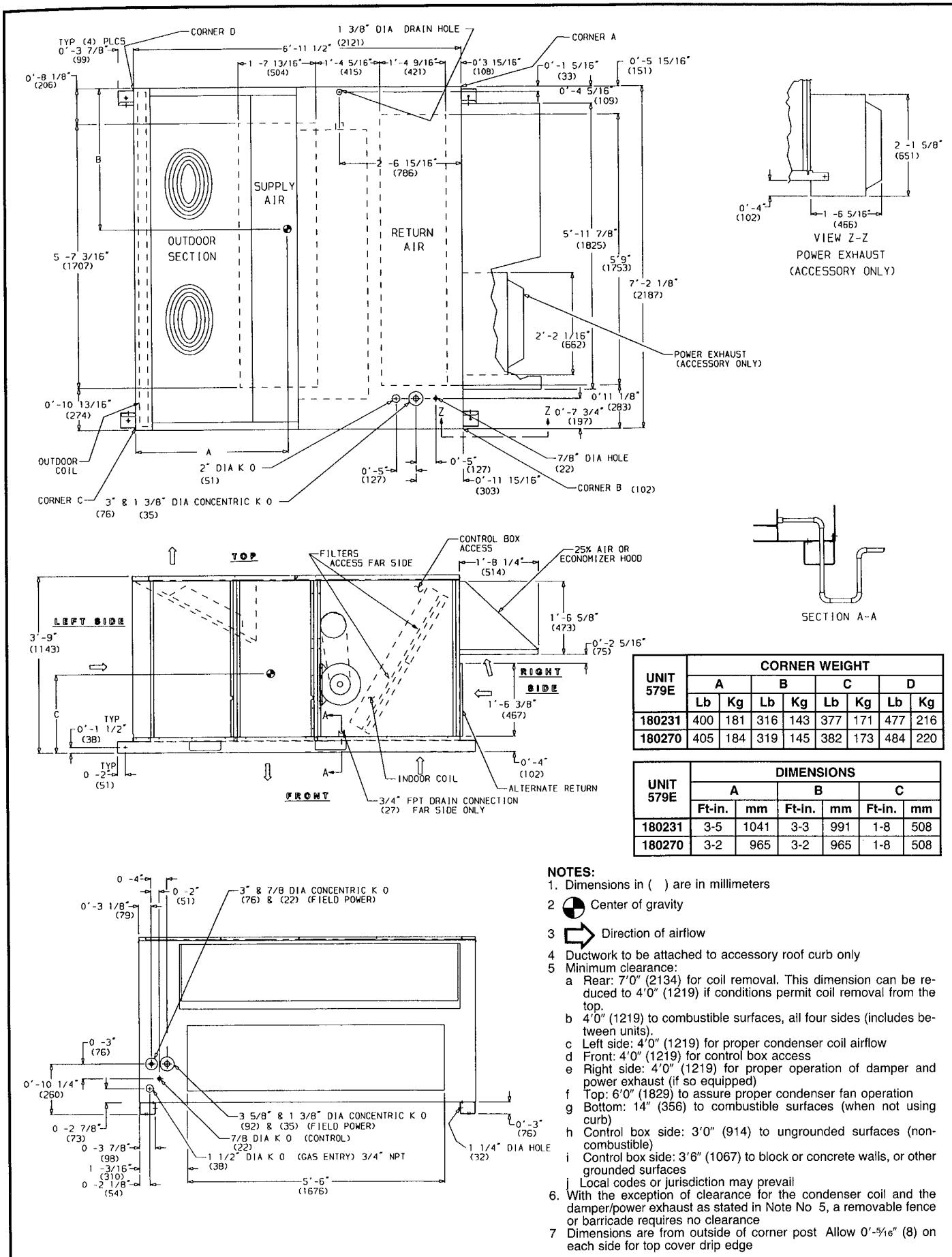


ELECTRICAL DISCONNECT LOCATION



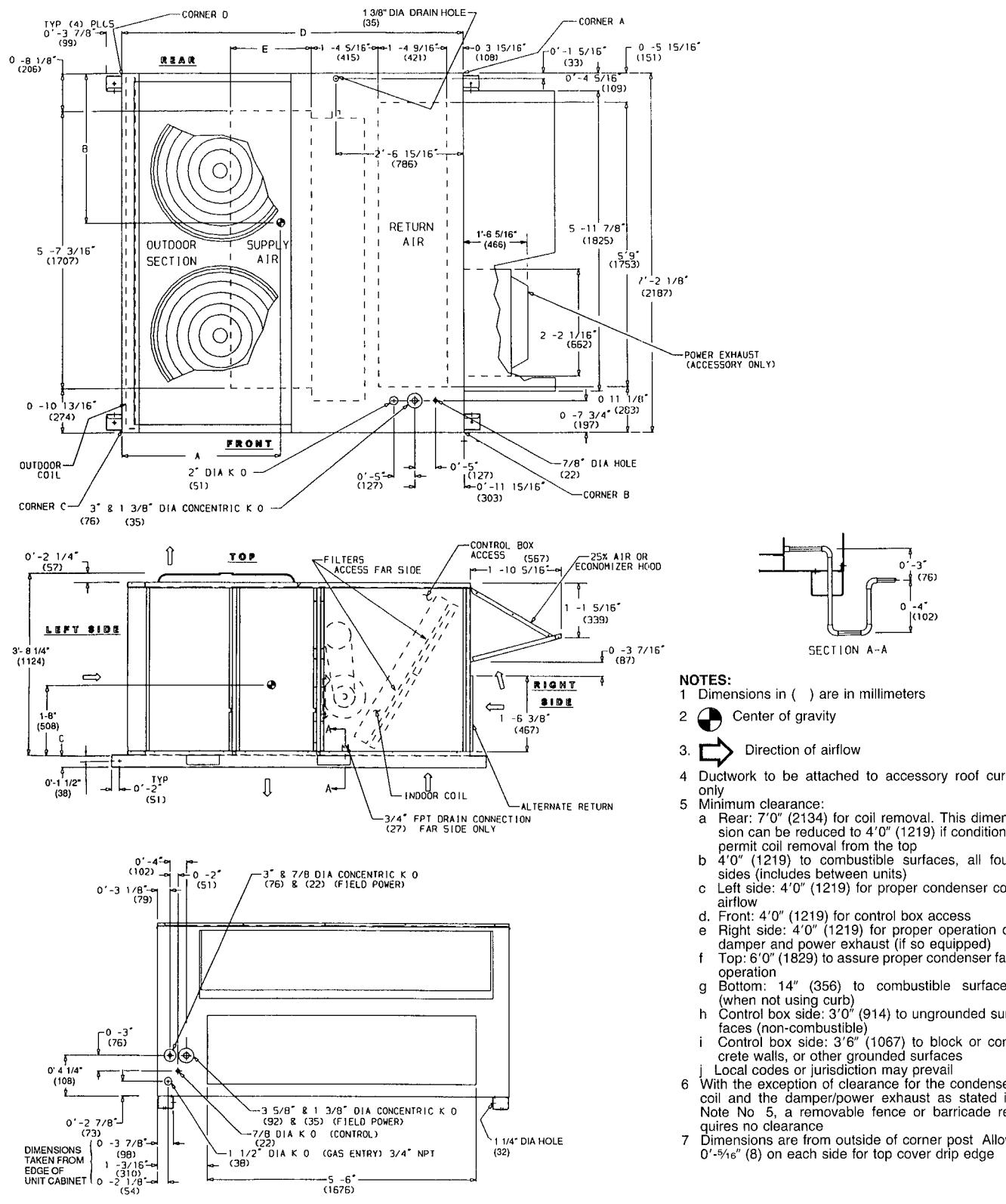
LEFT SIDE

# DIMENSIONAL DRAWING — 579E180



**DIMENSIONAL DRAWING — 579E216/579F240,300**

UNIT 579	CORNER WEIGHT								DIMENSIONS									
	A		B		C		D		A		B		C		D		E	
	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Ft-in.	mm	Ft-in.	mm	Ft-in.	mm	Ft-in.	mm	Ft-in.	mm
E216270	498	226	472	214	358	162	567	257	3-3	991	3-7	1092	0-3	76	6-11½	2121	1-7½	504
F240270	498	226	472	214	358	162	567	257	3-3	991	3-7	1092	0-3	76	6-11½	2121	1-7½	504
F240485	431	196	421	191	494	224	685	311	4-2	1270	3-4	1016	0-4½	114	8- 7¼	2623	3-3½	1006
F300270	523	237	541	245	574	260	596	270	3-3	991	3-7	1092	0-3	76	6-11½	2121	1-7½	504
F300485	465	211	486	220	725	329	737	334	4-2	1270	3-5	1041	0-4½	114	8- 7¼	2623	3-3½	1006



# DIMENSIONAL DRAWING — ROOF CURB, 580D036-072

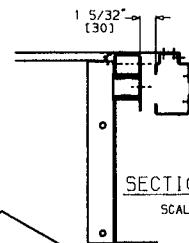
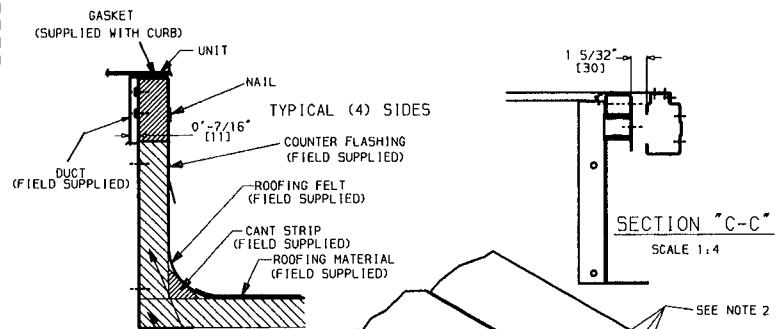
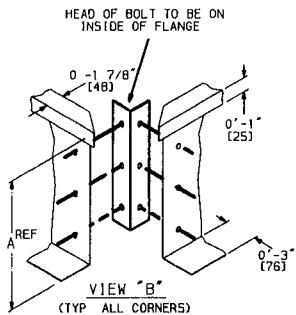
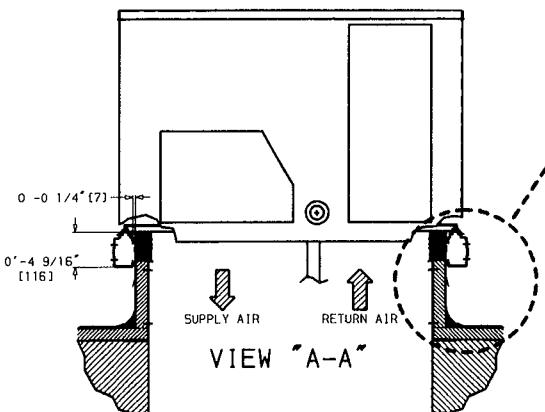
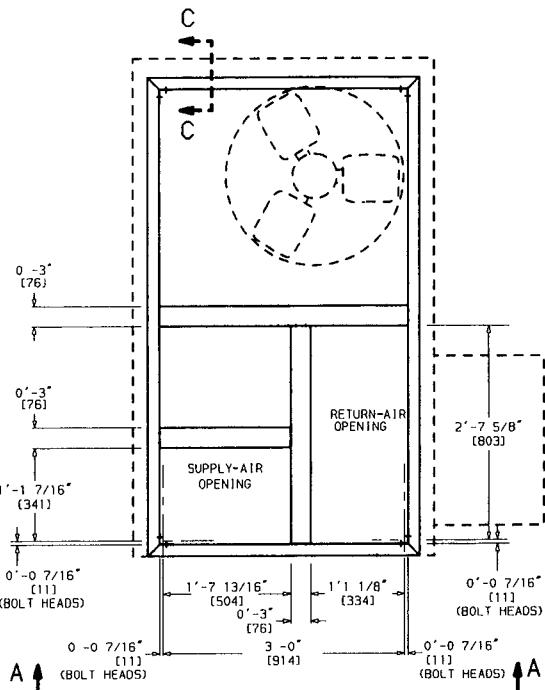
ROOF CURB ACCESSORY	"A"	UNIT SIZE
389028-201	1'-2" [356]	580D036-072
389028-202	2'-0" [610]	

**NOTES:**

1. Roof curb accessory is shipped unassembled
2. Insulated panels
3. Dimensions in [ ] are in millimeters
4. Roof curb: galvanized steel.
5. Attach ductwork to curb (Flanges of duct rest on curb.)
6. Service clearance is 4 ft on each side.
7. Direction of airflow.

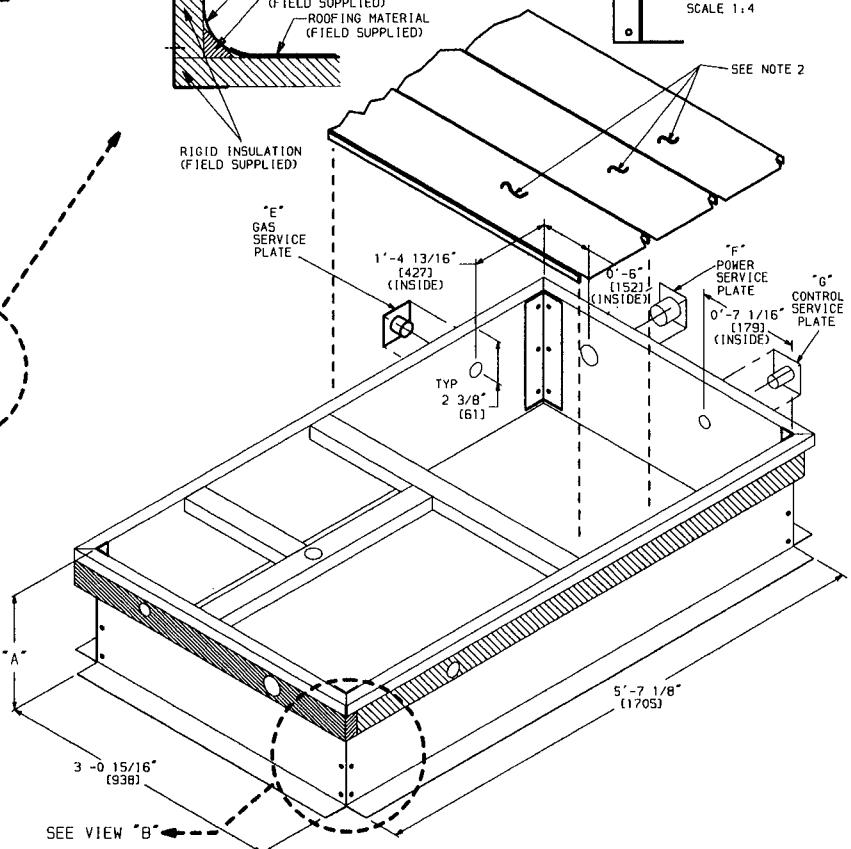
**SERVICE PLATE SIZES**

UNIT SIZE	"E" GAS	"F" POWER	"G" CONTROL	CONNECTOR PKG ACY
580D036-072	3/4" [19] NPT	3/4" [19] NPT	3/4" [19] NPT	314213-204



SECTION "C-C"

SCALE 1:4



# DIMENSIONAL DRAWING – ROOF CURB, 580D090-150

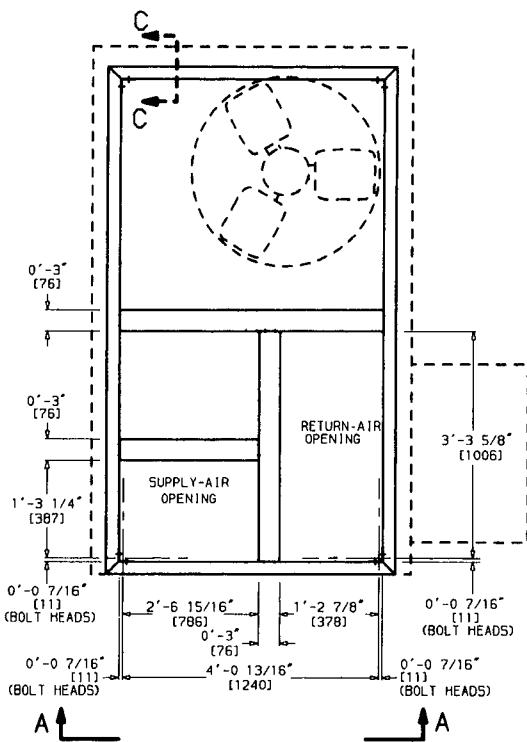
ROOF CURB ACCESSORY	"A"	UNIT SIZE
389028-203	1'-2" [356]	580D090-150
389028-204	2'-0" [610]	

## NOTES:

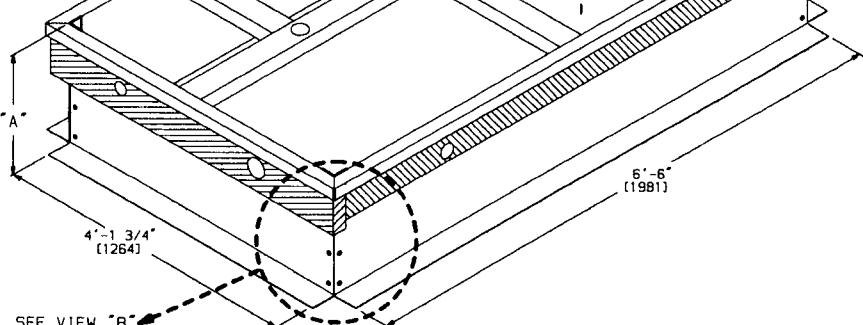
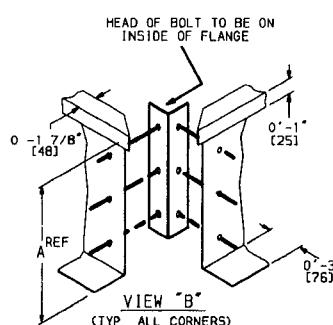
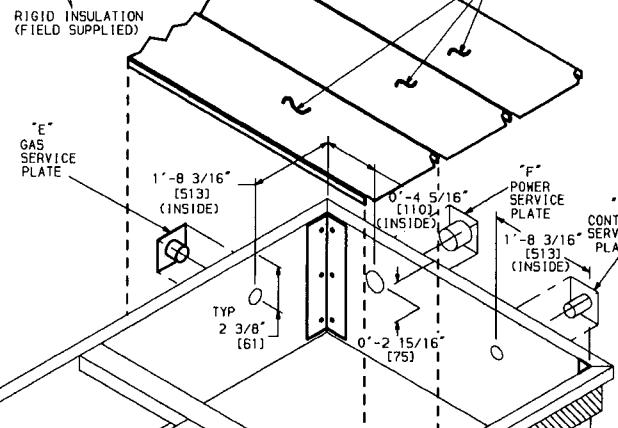
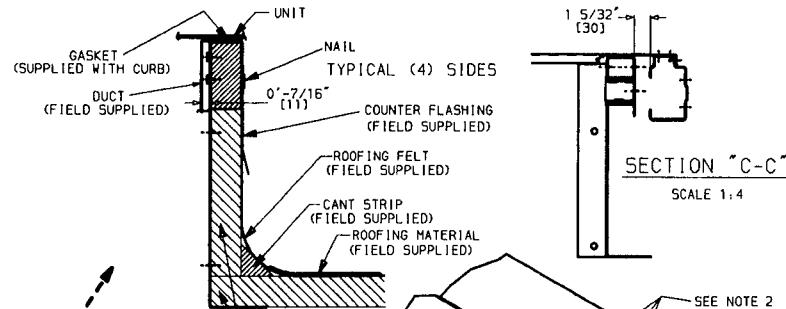
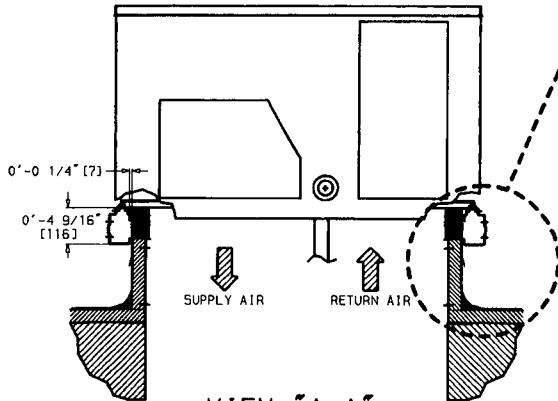
- 1 Roof curb accessory is shipped unassembled
- 2 Insulated panels.
- 3 Dimensions in [ ] are in millimeters
- 4 Roof curb: galvanized steel.
- 5 Attach ductwork to curb (flanges of duct rest on curb).
- 6 Service clearance 4 ft on each side
- 7 Direction of airflow

## SERVICE PLATE SIZES

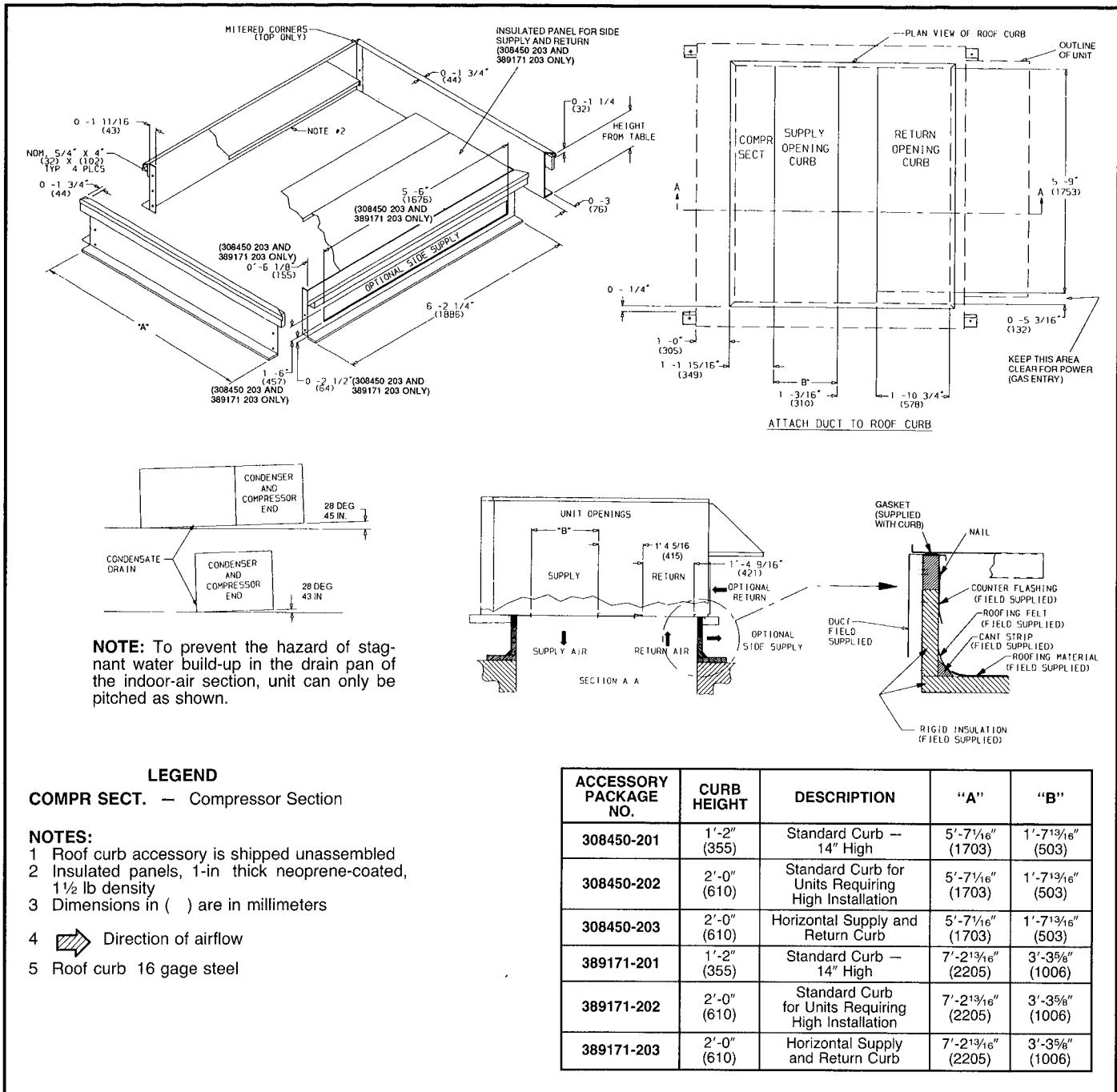
UNIT SIZE	"E" GAS	"F" POWER	"G" CONTROL	CONNECTOR PKG ACY
580D090-150	3/4" [19] NPT	1" [25] NPT	3/4" [19] NPT	389004-204



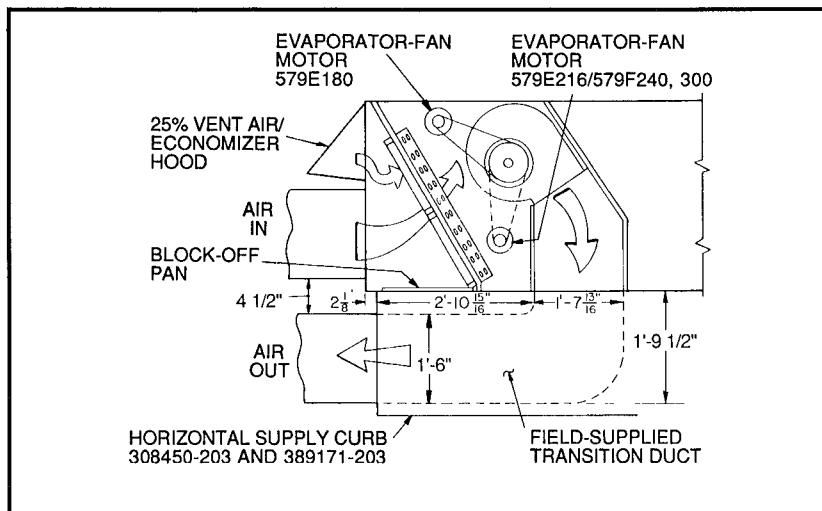
VIEW "A-A"



# DIMENSIONAL DRAWING – ROOF CURB, 579E180,216 AND 579F240,300



**DIMENSIONAL DRAWING – HORIZONTAL SUPPLY/RETURN CURB**  
**579E180,216/579F240,300**



**SPECIFICATIONS — 580D036-072**

UNIT SIZE	036	048	060	072
<b>NOMINAL CAPACITY (tons)</b>	3	4	5	6
<b>OPERATING WEIGHT (lb)</b>				
Unit				
Al/Al*	460	470	490	565
Economizer	34	34	34	34
Roof Curb	115	115	115	115
<b>COMPRESSOR</b>			Hermetic	
Quantity	1	1	1	1
Oil (oz)	50	50	50	65
<b>REFRIGERANT TYPE</b>		R-22		
Operating Charge (lb-oz)				
Circuit 1	3-6	4-11	5-13	9-0
Circuit 2	—	—	—	—
<b>CONDENSER COIL</b>		Enhanced Copper Tubes, Aluminum Lanced Fins		
Rows...Fins/in.	1...17	1.. 17	1.. 17	2 .17
Total Face Area (sq ft)	7.36	11.39	13.19	10.42
<b>CONDENSER FAN</b>		Propeller Type		
Nominal Cfm	4100	4100	4100	4100
Quantity...Diameter (in.)	1 . 22 0	1. 22.0	1.. 22 0	1 ..22 0
Motor Hp...Rpm	1/4...1100	1/4...1100	1/4...1100	1/4.. 1100
Watts Input (Total)	325	325	325	325
<b>EVAPORATOR COIL</b>		Enhanced Copper Tubes, Aluminum Double-Wavy Fins		
Rows...Fins/in.	2..15	2 . 15	3..15	4..15
Total Face Area (sq ft)	4.17	5.5	5.5	5.5
<b>EVAPORATOR FAN</b>		Centrifugal Type		
Quantity...Size (in.)	Std	1 . 10 x 10	1...10 x 10	1 ..10 x 10
	Alt	1. .10 x 10	1..10 x 10	—
Type Drive	Std	Direct	Direct	Direct
	Alt	Belt	Belt	—
Nominal Cfm	Std	1200	1600	2000
	Alt	1200	1600	2000
Motor Hp	Std	—	—	—
	Alt	—	—	—
Maximum Continuous Bhp	Std	34	81	1.19
	Alt	.66	1.20	1.80
Motor Frame Size	Std	48	48	48
	Alt	48	48	48
Nominal Rpm High/Low	Std	860/845	1080/970	1080/850
	Alt	—	—	—
Fan Rpm Range	Std	—	—	1070-1460
	Alt	558-1326	970-1310	900-1300
Motor Bearing Type		Ball	Ball	Ball
Maximum Allowable Rpm		2100	2100	2100
Motor Pulley Pitch Diameter A/B (in.)	Std	—	—	2.8/3 8
	Alt	1 9/2.9	1.9/2.9	2 4/3 4
Nominal Motor Shaft Diameter (in.)	Std	1/2	1/2	1/2
	Alt	1/2	1/2	—
Fan Pulley Pitch Diameter (in.)	Std	—	—	4 5
	Alt	4.5	4.0	4.5
Nominal Fan Shaft Diameter (in.)	Std	—	—	—
Belt, Quantity...Type...Length (in.)	Alt	1 . A...39	1 A 36	1...A ..39
Pulley Center Line Distance (in.)	Std	—	—	14 7-15.5
	Alt	10 0-12 4	10 0-12 4	14.7-15.5
Speed Change per Full Turn of Movable Pulley Flange (rpm)	Std	—	—	78
Movable Pulley Maximum Full Turns From Closed Position	Alt	42	68	63
Factory Setting	Std	—	—	—
	Alt	5	5	5
Factory Speed Setting (rpm)	Std	—	—	—
	Alt	3	3	3
Fan Shaft Diameter at Pulley (in.)	Std	651	1106	1230
	Alt	5/8	5/8	5/8

(Table continued on next page.)

## SPECIFICATIONS — 580D036-072 (cont)

UNIT SIZE	036			048			060			072		
FURNACE SECTION	Medium Heat	High Heat	Low Heat	Medium Heat	High Heat	Low Heat	Medium Heat	High Heat	Low Heat	Medium Heat	High Heat	
Rollout Switch Cutout Temp (F)†	195	195	195	195	195	195	195	195	195	195	195	195
Burner Orifice Diameter (in. ...drill size)	Std	.113..33	113..33	.113..33	113..33	129..30	113..33	113..33	129..30	113..33	113..33	129..30
Natural Gas	Alt	.089..43	089..43	089..43	089..43	.102..38	089..43	089..43	.102..38	089..43	089..43	.102..38
Pilot Orifice Diameter (in. ...drill size)	Std	—	—	—	—	—	—	—	—	—	—	—
Natural Gas	Alt	—	—	—	—	—	—	—	—	—	—	—
Liquid Propane	Std	—	—	—	—	—	—	—	—	—	—	—
Liquid Propane	Alt	—	—	—	—	—	—	—	—	—	—	—
Thermostat Heat Anticipator Setting (amps)												
208/230 v Stage 1		14	.14	.14	.14	.14	14	.14	.14	.14	.14	.14
Stage 2		—	14	—	—	14	—	—	14	—	—	.14
460 v Stage 1		.14	.14	14	14	14	.14	.14	.14	.14	.14	.14
Stage 2		—	14	—	—	14	—	—	.14	—	—	.14
Gas Input (Btuh)	Stage 1	74,000	82,000	74,000	115,000	120,000	74,000	115,000	120,000	74,000	115,000	120,000
Stage 2		—	115,000	—	—	150,000	—	—	150,000	—	—	150,000
Efficiency (Steady State) (%)		80	80	80	80	80	80	80	80	80	80	80
Temperature Rise Range		25-55	55-85	25-55	35-65	50-80	25-55	35-65	50-80	25-55	35-65	50-80
Manifold Pressure (in. wg)												
Natural Gas	Std	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Liquid Propane	Alt	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Gas Valve Quantity		1	1	1	1	1	1	1	1	1	1	1
Field Gas Connection Size (in.)		1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
<b>HIGH-PRESSURE SWITCH (psig)***</b>												
Standard Compressor Internal Relief Cutout		450 ± 50							500 ± 50			
Reset (Auto.)		428							428			
320		320							320			
<b>LOW-PRESSURE SWITCH (psig)***</b>												
Cutout		7 ± 3							22 ± 7			
Reset (Auto.)		22 ± 7							22 ± 7			
<b>FREEZE PROTECTION THERMOSTAT (F)***</b>												
Opens		30 ± 5							45 ± 5			
Closes		45 ± 5							45 ± 5			
<b>OUTDOOR-AIR INLET SCREENS</b>												
Quantity...Size (in.)		Cleanable							1...20 x 24 x 1			
<b>RETURN-AIR FILTERS</b>												
Quantity...Size (in.)		Throwaway							2 16 x 25 x 2			

### LEGEND

AI	— Aluminum
Bhp	— Brake Horsepower
FIOP	— Factory-Installed Option

\*Evaporator coil fin material/condenser coil fin material.

†Rollout switch is manual reset.

\*\*Requires the accessory controls upgrade kit

††Weight of 14-in. roof curb

||Low-heat weight/high-heat weight.

¶System 1 consists of lower portion of condenser coil and lower portion of evaporator coil, and System 2 is the upper portion of both coils

\*\*\*The 579F300 unit requires 2-in. industrial-grade filters capable of handling face velocities of up to 625 ft/min

**NOTE:** The 580D036-150 units have a loss-of-charge/low-pressure switch (accessory) located in the liquid line. The 579E180,216 and 579F240,300 units have a low-pressure switch (standard) located in the suction line

**SPECIFICATIONS — 580D090-150**

UNIT SIZE	090	102	120	150
<b>NOMINAL CAPACITY (tons)</b>	7½	8½	10	12½
<b>OPERATING WEIGHT (lb)</b>				
Unit				
Al/Al*	870	880	1035	1050
Economizer	44	44	44	44
Roof Curb†	143	143	143	143
<b>COMPRESSOR</b>		Hermetic		
Quantity	2	2	2	2
Oil (oz)	50 ea	50 ea	50 ea	65 ea
<b>REFRIGERANT TYPE</b>		R-22		
<b>Operating Charge (lb-oz)</b>				
Circuit 1	7-0	7-0	9-7	10-0
Circuit 2	5-12	6-2	8-6	9-3
<b>CONDENSER COIL</b>		Enhanced Copper Tubes, Aluminum Lanced Fins		
Rows...Fins/in.	1...17	2...17	2...17	2...17
Total Face Area (sq ft)	20.50	14.25	19.86	25.00
<b>CONDENSER FAN</b>		Propeller Type		
Nominal Cfm	6500	6500	7000	7200
Quantity...Diameter (in.)	1...26	1...26	1...26	1...26
Motor Hp...Rpm	¾...1100	¾...1100	¾...1100	¾...1100
Watts Input (Total)	950	950	950	950
<b>EVAPORATOR COIL</b>		Enhanced Copper Tubes, Aluminum Double-Wavy Fins		
Rows...Fins/in.	3...15	3...15	3...15	4...15
Total Face Area (sq ft)	8.0	8.0	10.0	11.1
<b>EVAPORATOR FAN</b>		Centrifugal Type		
Quantity...Size (in.)	Std 1...15 x 15 Alt 1...15 x 15	1...15 x 15	1...15 x 15 1...15 x 15	1...15 x 15 1...15 x 15
Type Drive	Std Belt Alt Belt	Belt	Belt	Belt
Nominal Cfm	Std 3000 Alt 3000	3400	4000	5000
Motor Hp	Std — Alt —	—	—	—
Maximum Continuous Bhp	Std 2.40 Alt —	2.40	2.40	4.20
Motor Frame Size	Std 56 Alt —	56	56	56
Nominal Rpm High/Low	Std — Alt —	—	—	—
Fan Rpm Range	Std 590-840 Alt 685-935	685-935	685-935 835-1085	860-1080 900-1260
Motor Bearing Type	Ball	Ball	Ball	Ball
Maximum Allowable Rpm	2100	2100	2100	2100
Motor Pulley Pitch Diameter A/B (in.)	Std 2.4/3.4 Alt 2.8/3.8	2.8/3.8	2.8/3.8 3.4/4.4	4.0/5.0 3.1/4.1
Nominal Motor Shaft Diameter (in.)	Std 5/8 Alt —	5/8	5/8	7/8
Fan Pulley Pitch Diameter (in.)	Std 7.0 Alt 7.0	7.0	7.0	8.0
Nominal Fan Shaft Diameter (in.)	—	—	—	—
Belt, Quantity...Type...Length (in.)	Std 1...A...48 Alt 1...A...51	1...A...48	1...A...51 1...A...57	1...A...51 1...BX...46
Pulley Center Line Distance (in.)	Std 16.75-19.25 Alt 16.75-19.25	16.75-19.25	15.85-17.50 15.85-17.50	15.85-17.50 15.85-17.50
Speed Change per Full Turn of Movable Pulley Flange (rpm)	Std 50 Alt 50	50	50	44
Movable Pulley Maximum Full Turns From Closed Position	Std 5 Alt 5	5	5	5
Factory Setting	Std 5 Alt 5	—	5	6
Factory Speed Setting (rpm)	Std 590 Alt 685	685	685 835	860 900
Fan Shaft Diameter at Pulley (in.)	1	1	1	1

(Table continued on next page.)

## SPECIFICATIONS — 580D090-150 (cont)

UNIT SIZE	090			102			120			150	
FURNACE SECTION	Low Heat	Medium Heat	High Heat	Low Heat	Medium Heat	High Heat	Low Heat	Medium Heat	High Heat	Low Heat	Medium Heat
Rollout Switch Cutout Temp (F)†	195	195	195	195	195	195	195	195	195	195	195
Burner Orifice Diameter (in. ...drill size)											
Natural Gas	Std	.120..31	.120..31	.120..31	.120..31	.120..31	.120..31	.120..31	.120..31	.120..31	.120..30
Liquid Propane	Alt	.096..41	.096..41	.096..41	.096..41	.096..41	.096..41	.096..41	.096..41	.096..41	.096..38
Pilot Orifice Diameter (in. ...drill size)											
Natural Gas	Std	—	—	—	—	—	—	—	—	—	—
Liquid Propane	Alt	—	—	—	—	—	—	—	—	—	—
Thermostat Heat Anticipator Setting (amps)											
208/230 v Stage 1		14	14	14	.14	.14	14	14	14	14	14
Stage 2		20	20	20	.20	.20	.20	.20	.20	20	20
460 v Stage 1		.14	.14	.14	.14	.14	.14	.14	.14	.14	.14
Stage 2		.20	.20	.20	.20	.20	.20	.20	.20	.20	.20
Gas Input (Btu/h)	Stage 1	125,000	120,000	180,000	125,000	120,000	180,000	120,000	180,000	200,000	180,000
	Stage 2	—	180,000	220,000	—	180,000	220,000	180,000	220,000	250,000	220,000
Efficiency (Steady State) (%)		80	80	80	80	80	80	80	80	80	80
Temperature Rise Range		20-50	35-65	45-75	20-50	35-65	45-75	35-65	35-65	40-70	35-65
Manifold Pressure (in. wg)											
Natural Gas	Std	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Liquid Propane	Alt	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Gas Valve Quantity		1	1	1	1	1	1	1	1	1	1
Field Gas Connection Size (in.)		1/2	3/4	3/4	1/2	3/4	3/4	3/4	3/4	3/4	3/4
<b>HIGH-PRESSURE SWITCH (psig)***</b>											
Standard Compressor Internal Relief Cutout		450 ± 50								500 ± 50	
Reset (Auto.)		428								428	
		320								320	
<b>LOW-PRESSURE SWITCH (psig)***</b>											
Cutout		7 ± 3									
Reset (Auto.)		22 ± 7									
<b>FREEZE PROTECTION THERMOSTAT (F)***</b>											
Opens		30 ± 5									
Closes		45 ± 5									
<b>OUTDOOR-AIR INLET SCREENS</b>											
Quantity...Size (in.)		Cleanable 1...20 x 25 x 1 1...16 x 25 x 1									
<b>RETURN-AIR FILTERS</b>											
Quantity...Size (in.)		4 16 x 20 x 2			4...16 x 20 x 2			4 ..20 x 20 x 2			4 .20 x 20 x 2

### LEGEND

AI	— Aluminum
Bhp	— Brake Horsepower
FIOF	— Factory-Installed Option

\*Evaporator coil fin material/condenser coil fin material.

†Rollout switch is manual reset

\*\*Requires the accessory controls upgrade kit

††Weight of 14-in. roof curb.

||Low-heat weight/high-heat weight.

||System 1 consists of lower portion of condenser coil and lower portion of evaporator coil, and System 2 is the upper portion of both coils

\*\*\*The 579F300 unit requires 2-in. industrial-grade filters capable of handling face velocities of up to 625 ft/min.

**NOTE:** The 580D036-150 units have a loss-of-charge/low-pressure switch (accessory) located in the liquid line. The 579E180,216 and 579F240,300 units have a low-pressure switch (standard) located in the suction line.

**SPECIFICATIONS — 579E180,216 AND 579F240,300**

UNIT SIZE	180	216	240	300
<b>NOMINAL CAPACITY (tons)</b>	15	18	20	25
<b>OPERATING WEIGHT (lb)</b>				
Unit				
Al/Al*	1570/1590	1894	1894/2074	2234/2414
Economizer	110	110	110	110
Roof Curb††	200	200	200/213	200/213
<b>COMPRESSOR</b>	Semi-Hermetic	Hermetic		Semi-Hermetic
Quantity	1	2	2	2
Oil (oz)	160	65 ea	65 ea	152 ea
<b>REFRIGERANT TYPE</b>		R-22		
<b>Operating Charge (lb-oz)</b>				
Circuit 1	23-9	15-8	15-8	16-12
Circuit 2	—	15-8	15-8	15-12
<b>CONDENSER COIL</b>		Enhanced Copper Tubes, Aluminum Lanced Fins		
Rows...Fins/in.	3...13.6	4...15	4...15	4...15
Total Face Area (sq ft)	18.9	22.2	22.2	22.2
<b>CONDENSER FAN</b>		Propeller Type		
Nominal Cfm	12,000	14,200	14,200	14,200
Quantity...Diameter (in.)	2...26	2 30	2..30	2..30
Motor Hp...Rpm	1...1075	1. 1075	1...1075	1..1075
Watts Input (Total)	3550	3550	3550	3550
<b>EVAPORATOR COIL</b>		Copper Tubes, Aluminum or Copper Plate Fins		
Rows...Fins/in.	3 ..14.3	4 ..15	4 ..15	4 ..15
Total Face Area (sq ft)	16.5	17.9	17.9	17.9
<b>EVAPORATOR FAN</b>		Centrifugal Type		
Quantity...Size (in.)	Std 2...10 x 10 Alt 2...10 x 10	2. 12 x 12 —	2. 12 x 12 2 .12 x 12	2...12 x 12 2..12 x 12
Type Drive	Std Belt Alt Belt	Belt —	Belt Belt	Belt Belt
Nominal Cfm	Std 6000 Alt 6000	8000 —	8000 10,000	10,000 10,000
Motor Hp	Std 3.0 Alt 3.7	5 —	5 7½	7½ 10
Maximum Continuous Bhp	Std 3.45	5.90	5.90	8.7 [208/230 v] 9.5 [460 v]
	Alt 4.25	—	8.7 [208/230 v] 9.5 [460 v]	10.2 [208/230 v] 11.8 [460 v]
Motor Frame Size	Std — Alt —	184T —	184T 213T	213T 215T
Nominal Rpm High/Low	Std — Alt —	— —	— —	— —
Fan Rpm Range	Std 896-1161 Alt 1141-1407	— —	— —	— —
Motor Bearing Type		Ball	Ball	Ball
Maximum Allowable Rpm		1550	1500	1500
Motor Pulley Pitch Diameter A/B (in.)	Std 1.9/2.9 Alt 3 4/4.4	5 1 —	5 1 6 1	6 1 6 9
Nominal Motor Shaft Diameter (in.)	Std 7/8 Alt 7/8	1 1/8 —	1 1/8 1 3/8	1 3/8 1 3/8
Fan Pulley Pitch Diameter (in.)	Std 4.9 Alt 5.5	8.4 —	8.4 8.4	8.4 8.4
Nominal Fan Shaft Diameter (in.)	Std 1 1/16	1 7/16	1 7/16	1 7/16
Belt, Quantity...Type...Length (in.)	Std 1 ..BX.. 38 Alt 1. A ..43	1...B...50 —	1. .B...50 1...BX...51	1...BX...51 1...BX.. 53
Pulley Center Line Distance (in.)	Std — Alt —	— —	— —	— —
Speed Change per Full Turn of Movable Pulley Flange (rpm)	Std 54 Alt 54	— —	— —	— —
Movable Pulley Maximum Full Turns From Closed Position	Std 5 Alt 5	— —	— —	— —
Factory Setting	Std 3.5 Alt 3.5	— —	— —	— —
Factory Speed Setting (rpm)	Std 975 Alt 1221	1070 —	1070 1287	1287 1438
Fan Shaft Diameter at Pulley (in.)		1 3/16	1 7/16	1 7/16

(Table continued on next page )

**SPECIFICATIONS — 579E180,216 AND 579F240,300 (cont)**

UNIT SIZE	180		216		240		300	
	Low Heat	High Heat	Low Heat	Low Heat	High Heat	Low Heat	High Heat	High Heat
<b>FURNACE SECTION</b>								
Rollout Switch Cutout Temp (F)†	190	190	190	190	190	190	190	190
Burner Orifice Diameter (in. ...drill size)								
Natural Gas	Std	.113 .33	.113 .33	.113 .33	.113 .33	.113 .33	.113 .33	.113 .33
Liquid Propane	Alt	—	—	—	—	—	—	—
Pilot Orifice Diameter (in. ...drill size)								
Natural Gas	Std	.064...52	.064...52	.064.. 52	.064...52	.064...52	.064...52	.064. 52
Liquid Propane	Alt	—	—	—	—	—	—	—
Thermostat Heat Anticipator Setting (amps)								
208/230 v Stage 1		.98	.98	.98	.98	.98	.98	.98
Stage 2		.44	.44	.44	.44	.44	.44	.44
460 v Stage 1		1 20	1.20	1.20	1.20	1.20	1.20	1 20
Stage 2		.44	.44	.44	.44	.44	.44	.44
Gas Input (Btuh)	Stage 1	115,500	115,500	115,500	115,500	242,500	115,500	242,500
	Stage 2	231,000	270,000	270,000	270,000	485,000	270,000	485,000
Efficiency (Steady State) (%)		80	80	80	80	80	80	80
Temperature Rise Range		25-55	25-55	15-45	15-45	35-65	15-45	35-65
Manifold Pressure (in. wg)								
Natural Gas	Std	3 5	3 5	3.5	3 5	3 5	3.5	3.5
Liquid Propane	Alt	—	—	—	—	—	—	—
Gas Valve Quantity		2	2	2	2	2	2	2
Field Gas Connection Size (in.)		3/4	3/4	3/4	3/4	3/4	3/4	3/4
<b>HIGH-PRESSURE SWITCH (psig)</b>								
Standard Compressor Internal Relief Cutout					—			
Reset (Auto.)					426			
					320			
<b>LOW-PRESSURE SWITCH (psig)</b>								
Cutout					7			
Reset (Auto.)					22			
<b>FREEZE PROTECTION THERMOSTAT (F)</b>								
Opens					30 ± 5			
Closes					45 ± 5			
<b>OUTDOOR-AIR INLET SCREENS</b>								
Quantity...Size (in.)					Cleanable			
					2...20 x 25 x 1			
					1...20 x 20 x 1			
<b>RETURN-AIR FILTERS</b>								
Quantity...Size (in.)		2 ..20 x 20 x 2				Throwaway***		
		3 ..16 x 20 x 2					4...20 x 20 x 2	
		2...16 x 25 x 2					4.. 16 x 20 x 2	

**LEGEND**

Al	—	Aluminum
Bhp	—	Brake Horsepower
FIOP	—	Factory-Installed Option

\*Evaporator coil fin material/condenser coil fin material.

†Rollout switch is manual reset.

\*\*Requires the accessory controls upgrade kit

††Weight of 14-in. roof curb

||Low-heat weight/high-heat weight

¶System 1 consists of lower portion of condenser coil and lower portion of evaporator coil, and System 2 is the upper portion of both coils.

\*\*\*The 579F300 unit requires 2-in. industrial-grade filters capable of handling face velocities of up to 625 ft/min.

**NOTE:** The 580D036-150 units have a loss-of-charge/low-pressure switch (accessory) located in the liquid line. The 579E180,216 and 579F240,300 units have a low-pressure switch (standard) located in the suction line

## **SELECTION PROCEDURE (with 579E180270 example)**

## I DETERMINE COOLING AND HEATING REQUIREMENTS AT DESIGN CONDITIONS:

Given:

Total Cooling Capacity Required .....	173,000 Btu
Sensible Heat Capacity .....	114,000 Btu
Required Heating Capacity .....	200,000 Btu
Condenser Entering Air Temperature .....	95 F
Evaporator Entering Air Temperature .....	82 F Edb/ 67 F Ewb
Evaporator Air Quantity .....	4500 cfm
External Static Pressure .....	0.8 in. wg
Power Supply (V-Ph-Hz) .....	460-3-60
edb — Entering dry bulb	
ewb — Entering wet bulb	

## II DETERMINE UNIT SIZE:

Select unit based on cooling requirements.

Enter Gross Cooling Capacities tables on pages 22-25 at condenser entering temperature of 95 F, evaporator air entering at 4500 cfm and 80 F db and 67 F wb. The 579E180 unit will provide a gross cooling capacity of 179,000 Btuh and a sensible heat capacity of 120,000 Btuh. Since the evaporator air temperature is 82 F, calculate sensible heat capacity correction, using the formula found in Note 3 following the Gross Cooling Capacities tables.

**NOTE:** Unit ratings are gross capacities and do not include the effect of evaporator-fan motor heat. To calculate net capacities, see Step V.

### III SELECT HEATING CAPACITY OF UNIT TO PROVIDE DESIGN CONDITION REQUIREMENTS:

In the Heating Capacities table on page 5, note that unit 579E180270 will provide output capacity of 216,000 Btuh, which is adequate for the given application.

#### IV DETERMINE FAN SPEED AND POWER REQUIREMENTS AT DESIGN CONDITIONS:

Before entering the Air Delivery tables on pages 26-37, calculate the total static pressure required based on unit components. From the given and the Pressure Drop table on page 38, find:

External static pressure	0.80 in. wg
Economizer	0.04 in. wg
Total Static Pressure	0.84 in. wg

Enter the Air Delivery table for standard 579E180 at 4,500 cfm and 0.84 in. wg external static pressure. By interpolation, find that the rpm is 1100 and the bhp is 1.75. The shading indicates that the selection is the factory-installed standard motor and drive.

Convert bhp to Watts using the formula found in the notes following the Air Delivery tables on page 36.

For example:

$$\text{Watts} = \frac{746 \times 1.75}{84}$$

Watts = 1554

#### V DETERMINE NET COOLING CAPACITY:

Cooling capacities are gross capacities and do not include indoor (evaporator) fan motor (IFM) heat. Determine net capacity using the following formula:

Net capacity = gross capacity – IFM heat

$$= 179,000 \text{ Btu} - 1554 \text{ Watts} (3.412 \frac{\text{Btu}}{\text{Watt}})$$

$$= 179,000 \text{ Btuh} - 5302 \text{ Btuh}$$

Net capacity = 173,698 Btuh

$$\text{Net sensible capacity} = 120,000 - 53$$

Net sensible capacity = 114,698 Btu/h

The 579E180270 is the correct selection for the given conditions.

## GROSS COOLING CAPACITIES

580D036 (3 TON)											
Air Entering Evaporator			Air Entering Condenser (F)								
			85			95			105		
Cfm	BF	Ewb (F)	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh
			Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible	Total
900	0.11	72	40.8	19.4	3.14	38.7	18.6	3.35	36.5	17.8	3.55
		67	36.9	23.7	3.01	34.9	22.9	3.21	32.8	22.1	3.41
		62	33.3	27.9	2.90	31.4	27.0	3.09	29.2	25.9	3.27
1200	0.14	72	42.5	21.0	3.20	40.4	20.3	3.42	38.1	19.6	3.63
		67	38.7	26.8	3.08	36.6	26.0	3.29	34.3	25.2	3.49
		62	35.0	31.8	2.97	33.0	30.9	3.16	30.9	29.8	3.35
1500	0.17	72	43.6	22.6	3.24	41.4	22.0	3.47	39.0	21.2	3.68
		67	39.9	29.7	3.14	37.6	28.8	3.35	35.2	28.0	3.54
		62	36.1	35.1	3.02	34.1	34.0	3.22	32.4	32.3	3.43

580D048 (4 TON)											
Air Entering Evaporator			Air Entering Condenser (F)								
			85			95			105		
Cfm	BF	Ewb (F)	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh
			Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible	Total
1200	0.12	72	55.7	26.4	4.40	52.9	25.5	4.70	50.1	24.4	5.00
		67	50.8	32.5	4.24	48.1	31.5	4.54	45.3	30.3	4.81
		62	45.3	37.8	4.08	42.5	36.4	4.36	39.8	35.1	4.62
1600	0.15	72	57.7	28.4	4.47	55.2	27.6	4.78	52.3	26.7	5.10
		67	53.4	36.7	4.35	50.5	35.6	4.63	47.6	34.5	4.91
		62	48.5	43.6	4.20	45.7	42.2	4.47	42.8	40.7	4.73
2000	0.18	72	59.4	30.5	4.54	56.7	29.7	4.87	53.6	28.8	5.17
		67	55.0	40.3	4.42	52.0	39.2	4.70	48.9	38.1	4.99
		62	50.2	47.9	4.25	47.4	46.7	4.56	44.9	44.6	4.84

580D060 (5 TON)											
Air Entering Evaporator			Air Entering Condenser (F)								
			85			95			105		
Cfm	BF	Ewb (F)	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh
			Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible	Total
1500	0.07	72	69.2	33.4	5.50	65.5	32.1	5.88	61.9	30.8	6.25
		67	61.0	40.5	5.27	56.6	38.8	5.62	53.1	37.5	5.99
		62	54.2	47.3	5.02	50.4	45.6	5.37	47.1	44.1	5.72
2000	0.09	72	72.9	37.0	5.66	69.4	35.8	6.01	65.4	34.5	6.38
		67	65.6	46.9	5.41	60.9	45.3	5.76	56.6	43.7	6.13
		62	57.2	54.9	5.18	53.1	52.6	5.53	50.5	50.2	5.91
2500	0.12	72	75.2	40.1	5.75	71.2	39.1	6.12	67.1	37.9	6.50
		67	68.1	52.3	5.50	63.3	50.9	5.87	58.8	49.3	6.23
		62	61.5	61.3	5.29	57.8	57.8	5.67	54.5	54.5	6.06

### LEGEND

BF	— Bypass Factor
Edb	— Entering Dry Bulb
Ewb	— Entering Wet Bulb
kW	— Compressor Motor Power Input
MBtuh	— Btuh in thousands

### NOTES:

- 1 Direct interpolation is permissible Do not extrapolate
- 2 The following formulas may be used:
  - $t_{edb} = t_{ewb} - \frac{\text{sensible capacity (1000 x MBtuh)}}{1.10 \times \text{cfm}}$
  - $t_{lwb} = \text{Wet-bulb temperature corresponding to enthalpy of air leaving evaporator coil (h}_{lwb}\text{)}$
  - $h_{lwb} = h_{ewb} - \frac{\text{total capacity (1000 x MBtuh)}}{4.5 \times \text{cfm}}$

Where:  $h_{ewb}$  = Enthalpy of air entering evaporator coil
- 3 The sensible heat capacity is based on 80 F entering dry-bulb (edb) temperature of air entering evaporator coil
- Below 80 F edb, subtract (corr factor x cfm) from the sensible heat capacity
- Above 80 F edb, add (corr factor x cfm) to the sensible heat capacity
- Correction Factor =  $1.10 \times (1 - \text{BF}) \times (\text{edb} - 80)$

## GROSS COOLING CAPACITIES (cont)

580D072 (6 TON)														
Air Entering Evaporator			Air Entering Condenser (F)											
			85				95				105			
Cfm	BF	Ewb (F)	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	
			Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible	Compressor kW	
1500	0.05	72	79.2	37.3	6.05	76.2	36.3	6.60	72.5	34.9	7.12	68.8	33.5	7.63
		67	72.3	45.5	5.87	69.1	44.2	6.38	65.6	42.7	6.86	62.0	41.3	7.34
		62	65.5	53.7	5.69	62.1	52.1	6.15	58.7	50.6	6.60	55.2	49.1	7.05
2100	0.08	72	84.8	42.0	6.25	80.5	40.5	6.76	76.6	39.3	7.30	72.7	38.1	7.83
		67	77.1	53.0	6.04	73.4	51.6	6.54	69.6	50.2	7.05	65.7	48.7	7.55
		62	69.5	64.0	5.83	66.3	62.8	6.33	62.5	61.1	6.80	58.7	58.7	7.27
2700	0.10	72	87.1	45.8	6.33	83.7	44.9	6.90	79.2	43.5	7.42	74.7	42.0	7.94
		67	79.9	59.7	6.14	75.9	58.3	6.65	71.8	57.0	7.16	67.7	55.7	7.67
		62	72.7	72.7	5.95	68.0	68.0	6.39	64.3	64.3	6.90	60.7	60.7	7.40

580D090 (7½ TON)														
Air Entering Evaporator			Air Entering Condenser (F)											
			85				95				105			
Cfm	BF	Ewb (F)	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	
			Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible	Compressor kW	
2250	0.080	72	104.9	51.5	7.53	100.0	49.7	8.15	94.0	47.5	8.71	88.2	45.4	9.29
		67	96.1	63.7	7.24	90.8	61.7	7.81	85.3	59.5	8.37	79.4	57.1	8.92
		62	87.0	75.2	6.93	81.1	72.4	7.46	75.1	69.5	8.00	67.9	65.9	8.58
3000	0.105	72	110.5	56.9	7.73	104.6	55.0	8.32	98.6	53.0	8.93	91.7	50.5	9.46
		67	101.3	72.8	7.44	95.7	70.9	8.01	89.6	68.4	8.56	83.5	66.3	9.12
		62	92.3	87.1	7.14	86.6	84.2	7.69	80.7	80.6	8.25	75.3	75.2	8.86
3750	0.125	72	113.7	61.5	7.84	107.6	59.7	8.45	101.1	57.6	9.04	94.3	55.2	9.59
		67	104.4	81.0	7.55	98.6	79.0	8.14	92.3	76.8	8.70	85.9	73.9	9.25
		62	96.1	95.9	7.30	91.1	91.1	7.85	86.4	86.4	8.44	81.5	81.5	9.05

580D102 (8½ TON)														
Air Entering Evaporator			Air Entering Condenser (F)											
			85				95				105			
Cfm	BF	Ewb F	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	
			Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible	Compressor kW	
2550	0.080	72	118.5	58.0	8.22	112.7	56.0	8.83	106.6	53.7	9.43	100.5	51.5	10.04
		67	106.6	70.9	7.95	100.4	68.6	8.54	94.4	66.2	9.13	87.4	63.6	9.73
		62	94.1	82.8	7.68	87.8	79.8	8.25	81.3	76.6	8.82	73.8	72.6	9.42
3400	0.105	72	125.3	64.3	8.37	119.2	62.2	9.00	112.4	59.6	9.59	105.5	57.1	10.19
		67	113.3	81.7	8.12	107.1	79.3	8.73	100.7	76.9	9.31	94.2	74.3	9.89
		62	100.4	96.6	7.87	94.9	93.1	8.43	89.0	89.0	9.03	83.4	83.4	9.67
4250	0.125	72	129.7	69.8	8.49	122.6	67.3	9.08	116.3	65.7	9.73	108.4	62.4	10.29
		67	117.5	91.3	8.23	111.1	89.2	8.84	104.5	86.4	9.43	97.7	83.6	10.00
		62	106.2	106.0	7.99	101.4	101.3	8.61	96.3	96.2	9.23	90.9	90.9	9.86

### LEGEND

BF	— Bypass Factor
Edb	— Entering Dry Bulb
Ewb	— Entering Wet Bulb
KW	— Compressor Motor Power Input
MBtuh	— Btu in thousands

### NOTES:

- 1 Direct interpolation is permissible Do not extrapolate
- 2 The following formulas may be used:
 
$$t_{l,db} = t_{edb} - \frac{\text{sensible capacity (1000 x MBtuh)}}{110 \times \text{cfm}}$$

$$t_{l,wb} = \text{Wet-bulb temperature corresponding to enthalpy of air leaving evaporator coil (h}_{l,wb})$$

$$h_{l,wb} = h_{ewb} - \frac{\text{total capacity (1000 x MBtuh)}}{4.5 \times \text{cfm}}$$

Where:  $h_{ewb}$  = Enthalpy of air entering evaporator coil
- 3 The sensible heat capacity is based on 80 F entering dry-bulb (edb) temperature of air entering evaporator coil

Below 80 F edb, subtract (corr factor x cfm) from the sensible heat capacity  
 Above 80 F edb, add (corr factor x cfm) to the sensible heat capacity  
 Correction Factor =  $110 \times (1 - \text{BF}) \times (\text{edb} - 80)$

## GROSS COOLING CAPACITIES (cont)

580D120 (10 TON)														
Air Entering Evaporator			Air Entering Condenser (F)											
			85				95				105			
Cfm	BF	Ewb (F)	Capacity MBtuh		Compressor kW	Capacity MBtuh		Compressor kW	Capacity MBtuh		Compressor kW	Capacity MBtuh		
			Total	Sensible		Total	Sensible		Total	Sensible		Total	Sensible	
3000	0.07	72	139.1	66.3	10.55	132.8	64.1	11.36	126.0	61.7	12.16	118.8	59.0	12.91
		67	125.6	81.5	10.16	119.2	79.0	10.94	112.4	76.3	11.68	105.1	73.4	12.42
		62	111.4	95.1	9.78	104.2	91.8	10.53	97.6	88.6	11.24	90.1	84.8	11.94
4000	0.11	72	146.0	73.1	10.78	139.4	71.1	11.64	131.9	68.6	12.43	124.2	66.0	13.19
		67	132.8	93.5	10.43	126.1	91.1	11.23	119.0	88.3	11.99	111.6	85.7	12.74
		62	118.9	110.7	10.07	112.0	107.1	10.82	105.7	103.1	11.56	98.9	98.2	12.29
5000	0.15	72	150.5	79.1	10.94	143.7	77.4	11.81	135.8	74.7	12.62	128.1	72.7	13.42
		67	138.2	104.8	10.63	130.9	102.5	11.45	123.4	99.4	12.22	115.6	96.8	12.98
		62	125.1	124.6	10.24	118.8	118.8	11.04	113.1	113.1	11.84	107.7	107.7	12.64

580D150 (12½ TON)														
Air Entering Evaporator			Air Entering Condenser (F)											
			85				95				105			
Cfm	BF	Ewb (F)	Capacity MBtuh		Compressor kW	Capacity MBtuh		Compressor kW	Capacity MBtuh		Compressor kW	Capacity MBtuh		
			Total	Sensible		Total	Sensible		Total	Sensible		Total	Sensible	
3750	0.075	72	165.1	81.3	12.46	159.0	79.6	13.38	151.1	77.3	14.31	142.0	74.4	15.25
		67	152.0	102.3	12.25	144.6	99.6	13.09	135.1	96.5	13.96	118.5	89.9	14.83
		62	138.2	122.2	12.01	126.7	116.9	12.79	112.3	109.6	13.62	100.0	100.0	14.52
5000	0.100	72	172.2	89.4	12.62	165.6	88.1	13.53	157.9	86.5	14.49	148.5	83.7	15.46
		67	159.2	116.6	12.39	151.8	114.9	13.27	142.5	112.5	14.18	125.6	106.1	15.05
		62	145.9	140.7	12.18	137.2	136.7	13.01	125.8	125.8	13.89	114.8	114.8	14.83
6250	0.125	72	177.0	97.6	12.73	169.9	96.4	13.65	161.7	94.4	14.60	152.4	92.9	15.58
		67	163.4	129.6	12.48	156.3	128.7	13.39	147.3	126.7	14.30	132.3	121.2	15.18
		62	151.9	151.9	12.29	146.0	145.7	13.17	138.1	138.1	14.11	125.6	125.6	15.05

579E180 (15 TON)														
Air Entering Evaporator			Air Entering Condenser (F)											
			85				95				105			
Cfm	BF	Ewb (F)	Capacity MBtuh		Compressor kW	Capacity MBtuh		Compressor kW	Capacity MBtuh		Compressor kW	Capacity MBtuh		
			Total	Sensible		Total	Sensible		Total	Sensible		Total	Sensible	
4500	.060	72	204.0	97.4	15.90	197.0	96.0	17.20	189.0	92.9	18.50	180.0	90.0	19.90
		67	187.0	122.0	15.40	179.0	120.0	16.60	169.0	116.0	17.80	154.0	110.0	19.00
		62	169.0	145.0	14.90	155.0	139.0	15.90	142.0	132.0	17.10	128.0	125.0	18.30
6000	.080	72	210.0	106.0	16.10	204.0	104.0	17.50	197.0	103.0	18.90	186.0	101.0	20.20
		67	194.0	139.0	15.70	187.0	137.0	17.00	178.0	134.0	18.30	163.0	129.0	19.40
		62	177.0	168.0	15.20	166.0	163.0	16.40	155.0	154.0	17.60	144.0	144.0	18.90
7500	.100	72	215.0	115.0	16.40	209.0	114.0	17.80	200.0	112.0	19.10	191.0	111.0	20.50
		67	199.0	154.0	15.90	191.0	152.0	17.20	182.0	150.0	18.50	170.0	146.0	19.70
		62	184.0	183.0	15.50	178.0	177.0	16.80	169.0	169.0	18.00	158.0	158.0	19.30

### LEGEND

BF	— Bypass Factor
Edb	— Entering Dry Bulb
Ewb	— Entering Wet Bulb
kW	— Compressor Motor Power Input
MBtuh	— Btu in thousands

### NOTES:

- 1 Direct interpolation is permissible Do not extrapolate
- 2 The following formulas may be used:
 
$$t_{edb} = t_{edb} - \frac{\text{sensible capacity (1000 x MBtuh)}}{110 \times \text{cfm}}$$

$t_{lwb}$  = Wet-bulb temperature corresponding to enthalpy of air leaving evaporator coil ( $h_{lwb}$ )

$$h_{lwb} = h_{ewb} - \frac{\text{total capacity (1000 x MBtuh)}}{4.5 \times \text{cfm}}$$

Where:  $h_{ewb}$  = Enthalpy of air entering evaporator coil
- 3 The sensible heat capacity is based on 80 F entering dry-bulb (edb) temperature of air entering evaporator coil

Below 80 F edb, subtract (corr factor x cfm) from the sensible heat capacity  
 Above 80 F edb, add (corr factor x cfm) to the sensible heat capacity  
 Correction Factor =  $1.10 \times (1 - BF) \times (edb - 80)$

## GROSS COOLING CAPACITIES (cont)

579E216 (18 TON)														
Air Entering Evaporator			Air Entering Condenser (F)											
			85				95				105			
Cfm	BF	Ewb (F)	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW		
			Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible		
5000	0.045	72	232.1	108.8	17.34	223.0	105.8	18.96	212.0	101.9	20.48	202.9	98.3	21.84
		67	210.2	132.8	16.96	202.9	129.9	18.50	192.0	125.9	19.93	178.0	120.8	21.20
		62	188.4	156.1	16.46	179.5	153.3	17.82	167.5	147.7	19.09	153.2	144.1	20.48
6000	0.060	72	235.7	114.2	17.48	227.5	112.0	19.12	216.6	108.6	20.66	206.6	105.0	22.11
		67	214.8	143.5	17.13	206.6	140.6	18.64	196.6	136.9	20.11	183.5	132.2	21.48
		62	193.8	170.8	16.63	184.8	167.2	18.01	172.6	161.5	19.38	159.8	155.2	20.84
7000	0.075	72	239.3	119.6	17.62	232.1	118.2	19.28	221.1	115.2	20.84	210.2	111.7	22.39
		67	219.3	154.2	17.29	210.2	151.2	18.77	201.1	147.9	20.29	188.9	143.6	21.75
		62	199.3	185.5	16.81	190.1	181.0	18.20	177.7	175.4	19.67	166.3	166.2	21.20
8000	0.085	72	242.1	125.6	17.74	235.7	124.5	19.43	225.7	121.7	20.93	212.9	118.1	22.48
		67	225.7	166.5	17.34	218.4	163.8	18.83	203.8	158.4	20.48	192.4	154.3	21.93
		62	203.8	197.7	16.96	195.0	193.2	18.37	184.6	184.6	19.96	174.6	174.6	21.48

579F240 (20 TON)														
Air Entering Evaporator			Air Entering Condenser (F)											
			85				95				105			
Cfm	BF	Ewb (F)	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW		
			Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible		
6000	0.060	72	259.0	125.5	19.21	250.0	123.1	21.01	238.0	119.3	22.70	227.0	115.4	24.30
		67	236.0	157.7	18.82	227.0	154.5	20.48	216.0	150.4	22.10	201.6	145.3	23.60
		62	213.0	187.7	18.28	203.1	183.7	19.79	189.7	177.5	21.30	175.6	170.5	22.90
7000	0.075	72	263.0	131.4	19.36	255.0	129.9	21.19	243.0	126.6	22.90	231.0	122.8	24.60
		67	241.0	169.5	19.00	231.0	166.2	20.63	221.0	162.5	22.30	207.6	157.8	23.90
		62	219.0	203.9	18.47	208.9	198.9	20.00	195.3	192.7	21.62	182.8	182.6	23.30
8000	0.085	72	266.0	138.0	19.49	259.0	136.8	21.35	248.0	133.7	23.00	234.0	129.8	24.70
		67	248.0	183.0	19.06	240.0	180.0	20.69	224.0	174.1	22.50	211.4	169.6	24.10
		62	224.0	217.3	18.64	214.3	212.3	20.19	202.9	202.9	21.93	191.9	191.9	23.60
9000	0.095	72	269.0	145.0	19.56	262.0	142.7	21.48	250.0	140.0	23.20	237.0	136.5	24.90
		67	252.0	193.0	19.17	246.0	189.0	20.82	226.0	184.8	21.60	214.6	180.2	24.10
		62	229.0	227.0	18.81	220.0	220.0	20.48	210.9	210.9	22.12	200.1	200.1	23.80

579F300 (25 TON)														
Air Entering Evaporator			Air Entering Condenser (F)											
			85				95				105			
Cfm	BF	Ewb (F)	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW	Capacity MBtuh	Compressor kW		
			Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible		
7,000	0.03	72	315.3	156.3	22.70	304.1	152.0	24.80	291.2	147.2	26.90	274.6	140.9	28.80
		67	290.4	191.7	22.10	277.4	186.5	24.00	261.4	179.7	25.80	237.9	170.0	27.80
		62	264.3	224.9	21.30	243.1	215.2	23.20	224.8	206.6	25.00	207.6	198.6	26.80
8,750	0.05	72	326.9	168.4	23.10	315.3	165.0	25.20	300.9	159.9	27.20	286.9	154.9	29.40
		67	303.2	213.2	22.50	290.1	208.5	24.50	274.2	201.8	26.30	251.5	193.2	28.20
		62	278.0	254.9	21.80	263.8	248.0	23.50	242.1	237.3	25.40	222.6	222.6	27.40
10,000	0.07	72	333.7	177.5	23.30	320.4	173.0	25.40	305.7	168.3	27.40	291.3	164.1	29.60
		67	309.1	226.9	22.70	295.6	222.4	24.60	283.3	216.8	26.60	258.4	208.7	28.50
		62	285.0	273.8	22.00	271.1	266.4	23.80	252.3	252.3	25.80	237.7	237.7	27.70
11,250	0.09	72	335.1	184.4	23.30	324.1	181.6	25.50	309.8	176.8	27.60	293.9	163.0	29.70
		67	314.2	240.7	22.80	300.6	236.5	24.80	284.8	231.1	26.80	267.5	224.3	28.50
		62	291.1	288.4	22.20	279.4	279.4	24.10	266.3	266.3	26.00	247.1	247.1	28.10

### LEGEND

BF — Bypass Factor  
 Edb — Entering Dry Bulb  
 Ewb — Entering Wet Bulb  
 kW — Compressor Motor Power Input  
 MBtuh — Btu in thousands

$$t_{edb} = t_{edb} - \frac{\text{sensible capacity (1000 x MBtuh)}}{110 \times \text{cfm}}$$

$$t_{lwb} = \text{Wet-bulb temperature corresponding to enthalpy of air leaving evaporator coil (hwb)}$$

$$h_{lwb} = h_{ewb} - \frac{\text{total capacity (1000 x MBtuh)}}{4.5 \times \text{cfm}}$$

Where:  $h_{ewb}$  = Enthalpy of air entering evaporator coil.

3. The sensible heat capacity is based on 80 F entering dry-bulb (edb) temperature of air entering evaporator coil

Below 80 F edb, subtract (corr factor x cfm) from the sensible heat capacity

Above 80 F edb, add (corr factor x cfm) to the sensible heat capacity

Correction Factor =  $1.10 \times (1 - BF) \times (edb - 80)$

### NOTES:

- 1 Direct interpolation is permissible Do not extrapolate
2. The following formulas may be used:

## AIR DELIVERY — VERTICAL DISCHARGE UNITS

580D036 (3 TON)								
AIRFLOW (Cfm)	STANDARD DIRECT DRIVE MOTOR							
	Low Speed				High Speed			
	208 V		230,460, 575 V		208 V		230,460, 575 V	
	ESP	Bhp	ESP	Bhp	ESP	Bhp	ESP	Bhp
900	0.46	0.17	0.48	0.19	0.49	0.21	0.51	0.25
1000	0.44	0.20	0.45	0.22	0.47	0.23	0.48	0.27
1100	0.40	0.21	0.42	0.24	0.44	0.25	0.45	0.29
1200	0.32	0.23	0.37	0.25	0.38	0.27	0.40	0.31
1300	0.28	0.24	0.32	0.26	0.32	0.29	0.34	0.32
1400	0.22	0.26	0.25	0.28	0.26	0.30	0.28	0.33
1500	0.16	0.27	0.18	0.33	0.20	0.31	0.21	0.34

### LEGEND

Bhp — Brake Horsepower

ESP — External Static Pressure (in. wg)

NOTE: Values include losses for filters, unit casing, and wet coils

580D036 (3 TON)																		
AIRFLOW (Cfm)	ALTERNATE BELT DRIVE MOTOR																	
	External Static Pressure (in. wg)																	
	0.2		0.3		0.4		0.5		0.6		0.7		0.8		0.85		0.9	
	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
900	673	0.18	736	0.22	805	0.25	865	0.29	911	0.34	957	0.39	988	0.43	1039	0.45	1061	0.47
950	691	0.20	750	0.23	821	0.27	885	0.32	925	0.36	977	0.41	1018	0.46	1052	0.48	1070	0.50
1000	709	0.22	782	0.28	835	0.30	900	0.35	937	0.38	992	0.44	1039	0.49	1061	0.51	1083	0.55
1050	727	0.24	786	0.29	851	0.32	914	0.37	950	0.41	1005	0.46	1055	0.52	1081	0.56	1089	0.57
1100	746	0.26	806	0.30	867	0.35	929	0.40	964	0.44	1013	0.49	1068	0.55	1092	0.58	1093	0.61
1150	770	0.30	826	0.32	885	0.38	944	0.43	979	0.47	1031	0.52	1089	0.61	1100	0.63	1112	0.66
1200	785	0.32	843	0.35	903	0.41	960	0.47	994	0.50	1045	0.56	1098	0.64	1109	0.66	1142	0.68
1250	805	0.35	869	0.39	922	0.45	977	0.50	1011	0.54	1060	0.59	1105	0.66	1138	0.70	—	—
1300	826	0.38	891	0.43	942	0.48	991	0.53	1047	0.60	1075	0.64	1122	0.70	—	—	—	—
1350	846	0.41	914	0.47	963	0.52	1013	0.58	1063	0.64	1092	0.68	1141	0.73	—	—	—	—
1400	868	0.45	937	0.51	984	0.57	1032	0.62	1067	0.67	1110	0.73	—	—	—	—	—	—
1450	889	0.49	961	0.56	1006	0.61	1052	0.67	1088	0.72	1129	0.78	—	—	—	—	—	—
1500	911	0.53	985	0.61	1029	0.66	1073	0.72	1109	0.77	—	—	—	—	—	—	—	—

### LEGEND

Bhp — Brake Horsepower

#### NOTES:

1. **Boldface** indicates field-supplied motor and drive required (See Note 5.)

2.        indicates maximum usable bhp.

3. *Maximum usable bhp is 0.66* Extensive motor and electrical testing on these units ensures that the full horsepower range of the motor can be utilized with confidence. Using your fan motors up to the horsepower ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.

4. Values include losses for filters, unit casing, and wet coils

5. Motor drive range: 558 to 1326 rpm. All other rpms require field-supplied drive. In order to achieve rpms over 790, reversal of the evaporator-fan and fan-motor pulleys in the field will be necessary. See Fan Rpm tables on page 38.

6. Use of a field-supplied motor may affect wire sizing. Contact your distributor to verify.

7. To convert bhp to watts:

$$\text{Watts input} = \frac{\text{Bhp} \times 746}{\text{Motor efficiency}}$$

Motor efficiency = 63

580D048 (4 TON)								
AIRFLOW (Cfm)	STANDARD DIRECT DRIVE MOTOR							
	Low Speed				High Speed			
	208 V		230,460, 575 V		208 V		230,460, 575 V	
	ESP	Bhp	ESP	Bhp	ESP	Bhp	ESP	Bhp
1200	0.53	0.44	0.58	0.48	0.72	0.56	0.84	0.65
1300	0.44	0.48	0.50	0.50	0.64	0.60	0.75	0.68
1400	0.35	0.50	0.42	0.54	0.56	0.63	0.67	0.69
1500	0.25	0.53	0.33	0.58	0.47	0.65	0.58	0.72
1600	0.16	0.57	0.24	0.60	0.38	0.68	0.50	0.74
1700	0.09	0.58	0.15	0.63	0.30	0.69	0.40	0.76
1800	0.00	0.61	0.06	0.65	0.22	0.71	0.32	0.78
1900	—	—	—	—	0.12	0.73	0.24	0.79
2000	—	—	—	—	0.03	0.74	0.15	0.81

### LEGEND

Bhp — Brake Horsepower

ESP — External Static Pressure (in. wg)

NOTE: Values include losses for filters, unit casing, and wet coils

## AIR DELIVERY – VERTICAL DISCHARGE UNITS (cont)

580D048 (4 TON)

AIRFLOW (Cfm)	ALTERNATE BELT DRIVE MOTOR																			
	External Static Pressure (in. wg)																			
	0.1		0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8	
	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
1200	596	0.20	665	0.25	779	0.36	872	0.48	957	0.60	1028	0.69	1083	0.74	—	—	—	—	—	—
1300	633	0.24	699	0.30	809	0.42	902	0.55	984	0.67	1058	0.80	1121	0.89	1171	0.94	—	—	—	—
1400	672	0.30	735	0.36	840	0.48	933	0.62	1011	0.75	1086	0.89	1153	1.02	1210	1.12	1257	1.17	—	—
1500	711	0.35	770	0.42	873	0.55	963	0.69	1041	0.84	1113	0.99	1180	1.13	—	—	—	—	—	—
1600	751	0.42	806	0.49	907	0.63	993	0.77	1072	0.93	1141	1.09	—	—	—	—	—	—	—	—
1700	791	0.49	843	0.57	941	0.72	1024	0.87	1103	1.04	1171	1.20	—	—	—	—	—	—	—	—
1800	831	0.58	881	0.66	976	0.81	1057	0.97	1132	1.14	—	—	—	—	—	—	—	—	—	—
1900	872	0.67	919	0.75	1011	0.92	1091	1.08	—	—	—	—	—	—	—	—	—	—	—	—
2000	913	0.77	958	0.86	1046	1.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—

### LEGEND

Bhp — Brake Horsepower

### NOTES:

1. **Boldface** indicates field-supplied drive required (See Note 5)
2. **████████** indicates field-supplied motor and drive required
3.        indicates maximum usable bhp
4. Maximum continuous bhp: 1.2.
5. Motor drive range: 970 to 1310 rpm. All other rpms require a field-supplied drive
6. Extensive motor and drive testing of these units ensures that the full horsepower range of the motor can be utilized with confidence. Using your fan mo-

tors up to the horsepower rating shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected

7. Values include losses for filters, unit casing, and wet coils

8. Use of a field-supplied motor may affect wire sizing. Contact your distributor to verify

9. To convert bhp to watts:

$$\text{Watts input} = \frac{\text{Bhp} \times 746}{\text{Motor efficiency}}$$

Motor efficiency = 79

580D060 (5 TON)

AIRFLOW (Cfm)	STANDARD DIRECT DRIVE MOTOR											
	Low Speed				Medium Speed				High Speed			
	208 V		230, 460, 575 V		208 V		230, 460, 575 V		208 V		230, 460, 575 V	
	ESP	Bhp	ESP	Bhp	ESP	Bhp	ESP	Bhp	ESP	Bhp	ESP	Bhp
1500	0.65	0.64	0.90	0.71	0.90	0.68	1.00	0.75	1.05	0.82	1.10	0.90
1600	0.45	0.64	0.80	0.71	0.80	0.70	0.92	0.77	0.97	0.84	1.03	0.93
1700	0.23	0.64	0.65	0.71	0.65	0.75	0.83	0.83	0.89	0.86	0.95	0.95
1800	0.01	0.64	0.52	0.71	0.52	0.79	0.73	0.87	0.78	0.88	0.87	0.97
1900	—	—	0.35	0.70	0.35	0.83	0.61	0.92	0.66	0.92	0.78	1.02
2000	—	—	0.19	0.64	0.19	0.84	0.50	0.93	0.55	0.94	0.68	1.04
2100	—	—	0.00	0.57	0.00	0.86	0.35	0.96	0.42	0.99	0.58	1.09
2200	—	—	—	—	—	—	0.22	0.95	0.30	1.02	0.47	1.12
2300	—	—	—	—	—	—	0.08	0.92	0.15	1.04	0.36	1.15
2400	—	—	—	—	—	—	0.00	0.89	0.02	1.06	0.25	1.18
2500	—	—	—	—	—	—	—	—	—	—	0.13	1.19

### LEGEND

Bhp — Brake Horsepower

ESP — External Static Pressure (in. wg)

NOTE: Values include losses for filters, unit casing, and wet coils

580D060 (5 TON)

AIRFLOW (Cfm)	ALTERNATE BELT DRIVE MOTOR																			
	External Static Pressure (in. wg)																			
	0.1		0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8	
	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
1500	750	0.37	808	0.43	914	0.57	1001	0.70	1084	0.85	1168	1.02	1199	1.11	1126	1.02	1243	1.32	1174	1.22
1600	794	0.44	846	0.50	950	0.65	1034	0.78	1111	0.93	1194	1.11	1263	1.27	1275	1.35	1340	1.48	1330	1.61
1700	839	0.52	884	0.58	983	0.73	1068	0.88	1145	1.04	1218	1.20	1295	1.40	1351	1.57	—	—	—	—
1800	885	0.61	924	0.67	1018	0.82	1105	0.99	1179	1.15	1246	1.32	1319	1.51	1343	1.63	—	—	—	—
1900	932	0.72	965	0.77	1057	0.94	1143	1.12	1212	1.27	1280	1.45	1343	1.63	—	—	—	—	—	—
2000	979	0.83	1008	0.88	1096	1.06	1177	1.24	1247	1.41	1314	1.59	1374	1.78	—	—	—	—	—	—
2100	1026	0.96	1051	1.01	1136	1.19	1210	1.37	1284	1.57	1347	1.74	—	—	—	—	—	—	—	—
2200	1074	1.10	1095	1.15	1173	1.33	1245	1.51	1322	1.73	—	—	—	—	—	—	—	—	—	—
2300	1122	1.25	1140	1.30	1210	1.47	1284	1.67	—	—	—	—	—	—	—	—	—	—	—	—
2400	1170	1.42	1185	1.46	1249	1.64	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2500	1218	1.61	1231	1.64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

### LEGEND

Bhp — Brake Horsepower

### NOTES:

1. **Boldface** indicates field-supplied drive required (See Note 5)

2. **████████** indicates field-supplied motor and drive required

3.        indicates maximum usable bhp

4. *Maximum usable bhp is 1.8* Extensive motor and drive testing on these units ensures that the full horsepower range of the motor can be utilized with confi-

dence. Using your fan motors up to the horsepower ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected

5. Motor drive range: 900 to 1300 rpm. All other rpms require field-supplied drive

6. Values include losses for filters, unit casing, and wet coils

7. To convert bhp to watts:

$$\text{Watts input} = \frac{\text{Bhp} \times 746}{\text{Motor efficiency}}$$

Motor efficiency = 81

## AIR DELIVERY – VERTICAL DISCHARGE UNITS (cont)

580D072 (6 TON)																		
AIRFLOW (Cfm)	STANDARD BELT DRIVE MOTOR																	
	External Static Pressure (in. wg)																	
	0.1		0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6	
	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
1800	935	0.67	983	0.75	1069	0.91	1152	1.08	1226	1.26	1294	1.45	1358	1.64	1420	1.85	1486	2.11
1900	982	0.78	1027	0.86	1111	1.03	1190	1.20	1263	1.40	1330	1.59	1392	1.79	1452	2.00	1511	2.23
2000	1029	0.90	1072	0.98	1154	1.16	1228	1.34	1301	1.54	1367	1.75	1428	1.96	1486	2.17	1542	2.39
2100	1076	1.03	1117	1.12	1197	1.31	1267	1.49	1338	1.69	1403	1.91	1464	2.13	1521	2.35		
2200	1124	1.18	1163	1.27	1240	1.47	1307	1.66	1376	1.86	1440	2.08	1500	2.31				
2300	1171	1.33	1209	1.43	1283	1.64	1350	1.84	1414	2.04	1478	2.27						
2400	1219	1.51	1255	1.61	1326	1.82	1392	2.03	1453	2.24								
2500	1267	1.70	1301	1.80	1370	2.02	1435	2.25										
2600	1315	1.90	1348	2.00	1414	2.23												
2700	1363	2.12	1395	2.23														
2800	1411	2.36																
2900																		

### LEGEND

Bhp — Brake Horsepower

#### NOTES:

1 **Boldface** indicates field-supplied drive required.

2 **██████████** indicates field-supplied motor and drive required

3 \_\_\_\_\_ indicates maximum usable bhp

4 Maximum continuous bhp: 2.4

5 Drive range: 1070 to 1460. All other rpms require a field-supplied drive

6 Values include losses for filters, unit casing, and wet coils

7 Use of field-supplied motor may affect wire sizing. Contact your distributor to verify

8 Extensive motor and electrical testing on these units ensures that the full horsepower range of the motor can be utilized with confidence. Using your fan motors up to the horsepower ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.

9 There is no factory-installed alternate motor or drive available for 580D072 units.

10 To convert bhp to watts:

$$\text{Watts input} = \frac{\text{Bhp} \times 746}{\text{Motor efficiency}}$$

Motor efficiency = 81

580D090 (7 1/2 TON)																		
AIRFLOW (Cfm)	STANDARD BELT DRIVE MOTOR AND ALTERNATE BELT DRIVE																	
	External Static Pressure (in. wg)																	
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6			
	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
2200	506	0.52	586	0.72	656	0.95	718	1.18	776	1.43	—	—	—	—	—	—	—	—
2300	521	0.57	600	0.79	668	1.02	730	1.26	786	1.50	843	1.83	—	—	—	—	—	—
2400	536	0.63	613	0.85	680	1.09	741	1.34	796	1.59	849	1.88	910	2.31	—	—	—	—
2500	551	0.69	626	0.93	693	1.17	753	1.43	808	1.69	859	1.96	912	2.31	—	—	—	—
2600	567	0.75	641	1.00	706	1.25	764	1.52	819	1.79	869	2.06	918	2.37				
2700	582	0.83	655	1.08	719	1.34	776	1.61	831	1.89	880	2.17	927	2.42	—	—		
2800	598	0.90	670	1.17	732	1.43	789	1.71	842	2.00	892	2.29	936	2.47	—	—		
2900	614	0.98	684	1.25	745	1.53	802	1.81	854	2.11	893	2.42	945	2.51	—	—		
3000	630	1.07	699	1.35	759	1.63	815	1.92	866	2.23	915	2.54	955	2.57	—	—		
3100	646	1.16	714	1.45	773	1.74	828	2.04	878	2.35	925	2.67	962	2.69	—	—		
3200	662	1.26	729	1.55	787	1.86	841	2.16	891	2.58	928	2.81	963	2.84	—	—		
3300	679	1.36	744	1.66	801	1.98	854	2.29	904	2.61	930	2.86	965	2.89	—	—		
3400	695	1.47	759	1.78	816	2.10	867	2.52	917	2.75	936	3.00	976	3.10	—	—		
3500	712	1.59	774	1.90	830	2.23	881	2.56	930	2.90	946	3.25	987	3.32	—	—		
3600	729	1.71	790	2.03	845	2.37	895	2.77	944	3.05	958	3.32	—	—		—		
3700	745	1.84	805	2.17	—	—	902	2.87	956	3.27	—	—	—	—	—	—	—	—
3800	762	1.98	821	2.31	—	—	904	2.89	958	3.29	—	—	—	—	—	—	—	—
3900	779	2.12	836	2.45	—	—	906	2.91	960	3.31	—	—	—	—	—	—	—	—
4000	796	2.27	852	2.59	—	—	908	2.93	962	3.33	—	—	—	—	—	—	—	—
4100	813	2.42	868	2.73	—	—	910	2.95	964	3.35	—	—	—	—	—	—	—	—
4200	830	2.59	884	2.88	—	—	912	2.97	966	3.37	—	—	—	—	—	—	—	—
4300	847	2.76	900	3.03	—	—	914	2.99	968	3.39	—	—	—	—	—	—	—	—

### LEGEND

Bhp — Brake Horsepower

#### NOTES:

1 **Boldface** indicates field-supplied drive required.

2 **██████████** indicates field supplied motor and drive required

3 \_\_\_\_\_ indicates maximum usable bhp

4 Maximum continuous bhp: 2.4

5 Standard drive range: 590 to 840 rpm. Alternate drive range: 685 to 935 rpm

All other rpms require a field-supplied drive

6 Values include losses for filters, unit casing, and wet coils.

7 Use of field-supplied motor may affect wire sizing. Contact your distributor to verify.

8 Extensive motor and electrical testing on these units ensures that the full horsepower range of the motor can be utilized with confidence. Using your fan motors up to the horsepower ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.

9 To convert bhp to watts:

$$\text{Watts input} = \frac{\text{Bhp} \times 746}{\text{Motor efficiency}}$$

Motor efficiency = 83

## AIR DELIVERY — VERTICAL DISCHARGE UNITS (cont)

580D102 (8½ TON)																	
AIRFLOW (Cfm)	STANDARD BELT DRIVE MOTOR																
	External Static Pressure (in. wg)																
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		
	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	
2200	506	0.52	586	0.72	656	0.95	718	1.18	776	1.43	—	—	—	—	—	—	
2300	521	0.57	600	0.79	668	1.02	730	1.26	786	1.50	843	1.83	—	—	—	—	
2400	536	0.63	613	0.85	680	1.09	741	1.34	796	1.59	849	1.88	910	2.31	—	—	
2500	551	0.69	626	0.93	693	1.17	753	1.43	808	1.69	859	1.96	912	2.31	—	—	
2600	567	0.75	641	1.00	706	1.25	764	1.52	819	1.79	869	2.06	918	2.37	—	—	
2700	582	0.83	655	1.08	719	1.34	776	1.61	831	1.89	880	2.17	—	—	—	—	
2800	598	0.90	670	1.17	732	1.43	789	1.71	842	2.00	892	2.29	—	—	—	—	
2900	614	0.98	684	1.25	745	1.53	802	1.81	854	2.11	—	—	—	—	—	—	
3000	630	1.07	699	1.35	759	1.63	815	1.92	866	2.23	—	—	—	—	—	—	
3100	646	1.16	714	1.45	773	1.74	828	2.04	878	2.35	—	—	—	—	—	—	
3200	662	1.26	729	1.55	787	1.86	841	2.16	—	—	—	—	—	—	—	—	
3300	679	1.36	744	1.66	801	1.98	854	2.29	—	—	—	—	—	—	—	—	
3400	695	1.47	759	1.78	816	2.10	—	—	—	—	—	—	—	—	—	—	
3500	712	1.59	774	1.90	830	2.23	—	—	—	—	—	—	—	—	—	—	
3600	729	1.71	790	2.03	845	2.37	—	—	—	—	—	—	—	—	—	—	
3700	745	1.84	805	2.17	—	—	—	—	—	—	—	—	—	—	—	—	
3800	762	1.98	821	2.31	—	—	—	—	—	—	—	—	—	—	—	—	
3900	779	2.12	838	2.45	—	—	—	—	—	—	—	—	—	—	—	—	
4000	796	2.27	852	2.57	—	—	—	—	—	—	—	—	—	—	—	—	
4100	812	2.43	868	2.70	—	—	—	—	—	—	—	—	—	—	—	—	
4200	830	2.59	884	2.85	—	—	—	—	—	—	—	—	—	—	—	—	
4300	847	2.76	900	3.03	—	—	—	—	—	—	—	—	—	—	—	—	

### LEGEND

Bhp — Brake Horsepower

#### NOTES:

- 1 **Boldface** indicates field-supplied drive required
- 2 **Shading** indicates field supplied motor and drive required
- 3 **Shading** indicates maximum usable bhp
- 4 Maximum continuous bhp: 2.4.
- 5 Drive range: 685 to 935 rpm. All other rpms require a field-supplied drive
- 6 Values include losses for filters, unit casing, and wet coils
- 7 Use of field-supplied motor may affect wire sizing. Contact your distributor to verify

8 Extensive motor and electrical testing on these units ensures that the full horsepower range of the motor can be utilized with confidence. Using your fan motors up to the horsepower ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected

9 There is no factory-installed alternate motor or drive available for 580D102 units

10 To convert bhp to watts:

$$\text{Watts input} = \frac{\text{Bhp} \times 746}{\text{Motor efficiency}}$$

Motor efficiency = 83

580D120 (10 TON)																		
AIRFLOW (Cfm)	STANDARD AND ALTERNATE BELT DRIVE MOTORS																	
	External Static Pressure (in. wg)																	
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8	
	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
3000	592	0.76	661	0.93	722	1.09	779	1.26	829	1.42	880	1.58	924	1.73	970	1.89	1019	2.00
3100	607	0.83	676	1.01	734	1.17	791	1.34	840	1.51	890	1.68	935	1.84	977	2.00	1026	2.17
3200	622	0.90	690	1.09	746	1.25	803	1.43	852	1.60	900	1.77	946	1.95	987	2.11	1029	2.28
3300	638	0.98	705	1.17	759	1.33	815	1.52	864	1.70	910	1.88	957	2.06	998	2.23	1037	2.40
3400	653	1.06	719	1.26	772	1.43	826	1.62	876	1.81	921	1.98	967	2.17	1009	2.35	1047	2.50
3500	669	1.15	733	1.35	786	1.53	838	1.72	888	1.91	933	2.10	976	2.29	1020	2.48	1058	2.66
3600	684	1.24	747	1.44	800	1.64	850	1.82	900	2.03	945	2.22	996	2.41	1020	2.61	1069	2.80
3700	700	1.33	760	1.54	814	1.75	863	1.92	912	2.14	957	2.34	998	2.54	1039	2.74	1084	2.94
3800	715	1.43	774	1.64	828	1.86	875	2.04	924	2.26	969	2.47	1030	2.67	1049	2.87	1112	3.10
3900	731	1.54	787	1.74	843	1.98	888	2.16	936	2.38	981	2.60	1022	2.81	1069	3.02	1124	3.25
4000	747	1.64	801	1.85	857	2.10	902	2.30	943	2.51	993	2.74	—	—	—	—	—	—
4100	763	1.76	816	1.97	872	2.23	916	2.44	960	2.64	1005	2.82	—	—	—	—	—	—
4200	778	1.88	831	2.10	886	2.36	929	2.58	972	2.78	—	—	—	—	—	—	—	—
4300	794	2.00	846	2.23	900	2.50	943	2.73	983	2.93	—	—	—	—	—	—	—	—
4400	810	2.13	861	2.37	913	2.64	958	2.99	994	3.19	—	—	—	—	—	—	—	—
4500	826	2.27	876	2.52	927	2.78	—	—	—	—	—	—	—	—	—	—	—	—
4600	842	2.41	892	2.67	942	2.92	—	—	—	—	—	—	—	—	—	—	—	—
4700	858	2.55	907	2.83	957	3.08	—	—	—	—	—	—	—	—	—	—	—	—
4800	874	2.70	923	2.99	973	3.24	—	—	—	—	—	—	—	—	—	—	—	—
4900	890	2.86	938	3.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5000	906	3.02	953	3.28	—	—	—	—	—	—	—	—	—	—	—	—	—	—

### LEGEND

Bhp — Brake Horsepower

#### NOTES:

- 1 **Boldface** indicates field-supplied drive required
- 2 **Shading** indicates alternate motor required (See Note 7)
- 3 **Shading** indicates field-supplied motor and drive required
- 4 **Shading** indicates maximum usable bhp of standard motor
- 5 **Shading** indicates maximum usable bhp of alternate motor
- 6 Maximum continuous bhp of standard motor: 2.4. Maximum continuous bhp of alternate motor: 2.9
- 7 Standard drive range: 685 to 935 rpm. Alternate drive range: 835 to 1085 rpm. All other rpms require a field-supplied drive

8 Extensive motor and electrical testing on these units ensures that the full horsepower range of the motor can be utilized with confidence. Using your fan motors up to the horsepower ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected

9 Use of field-supplied motor may affect wire sizing. Contact your distributor to verify

10 Values include losses for filters, unit casing, and wet coils.

11 To convert bhp to watts:

$$\text{Watts input} = \frac{\text{Bhp} \times 746}{\text{Motor efficiency}}$$

Motor efficiency = 83

## AIR DELIVERY – VERTICAL DISCHARGE UNITS (cont)

580D150 (12½ TON)																				
AIRFLOW (Cfm)	STANDARD BELT DRIVE MOTOR																			
	External Static Pressure (in. wg)																			
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8		2.0	
	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
3700	729	1.36	790	1.58	847	1.79	902	2.06	955	2.29	1008	2.55	1060	2.80	1108	3.05	1152	3.27	1190	3.46
3800	745	1.46	805	1.69	861	1.89	915	2.17	967	2.41	1019	2.67	1070	2.94	1118	3.19	1163	3.44	1203	3.65
3900	761	1.56	820	1.80	875	2.01	928	2.29	979	2.55	1029	2.80	1079	3.07	1128	3.34	1173	3.60	1214	3.83
4000	777	1.67	836	1.92	889	2.14	941	2.40	991	2.68	1040	2.94	1089	3.22	1137	3.49	1183	3.76	1225	4.00
4100	793	1.79	851	2.05	904	2.27	955	2.52	1004	2.82	1052	3.08	1100	3.36	1147	3.65	1193	3.93	1236	4.19
4200	810	1.91	867	2.18	918	2.41	968	2.65	1017	2.96	1064	3.23	1110	3.51	1157	3.81	1202	4.09	1245	4.38
4300	826	2.04	883	2.32	933	2.55	982	2.79	1030	3.11	1076	3.40	1121	3.67	1167	3.97	1212	4.27	1255	4.56
4400	842	2.17	898	2.46	948	2.70	996	2.93	1043	3.25	1088	3.56	1133	3.84	1178	4.14	1222	4.44	1265	4.74
4500	859	2.31	914	2.60	962	2.85	1010	3.09	1056	3.40	1101	3.73	1144	4.00	1198	4.31	1232	4.62	1274	4.93
4600	876	2.45	930	2.76	977	3.01	1024	3.26	1070	3.55	1114	3.90	1157	4.19	1202	4.49	1242	4.81	1284	5.13
4700	892	2.60	945	2.91	992	3.18	1039	3.43	1083	3.71	1126	4.07	1169	4.38	1210	4.68	1252	5.00	1284	5.38
4800	909	2.77	961	3.07	1008	3.36	1053	3.61	1097	3.88	1140	4.25	1181	4.58	1222	4.87	1263	5.20	—	—
4900	926	2.93	977	3.24	1024	3.54	1068	3.80	1111	4.06	1153	4.41	1194	4.77	1234	5.09	1274	5.41	—	—
5000	942	3.11	993	3.41	1039	3.73	1080	3.99	1125	4.25	1166	4.59	1207	4.97	1247	5.31	1286	5.62	—	—
5100	959	3.29	1009	3.60	1055	3.92	1097	4.19	1139	4.46	1180	4.78	1220	5.18	1263	5.52	—	—	—	—
5200	976	3.47	1025	3.78	1071	4.12	1112	4.40	1153	4.67	1194	4.98	1234	5.28	1274	5.64	—	—	—	—
5300	993	3.67	1041	3.98	1086	4.33	1127	4.61	1168	4.90	1208	5.19	1249	5.58	—	—	—	—	—	—
5400	1010	3.87	1057	4.18	1102	4.54	1142	4.84	1182	5.13	1224	5.58	—	—	—	—	—	—	—	—
5500	1027	4.07	1073	4.39	1118	4.76	1157	5.07	1197	5.36	1235	5.64	—	—	—	—	—	—	—	—
5600	1043	4.29	1090	4.61	1133	4.99	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5700	1060	4.51	1106	4.83	1149	5.22	1189	5.55	—	—	—	—	—	—	—	—	—	—	—	—
5800	1077	4.74	1122	5.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5900	1094	4.98	1139	5.35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6000	1111	5.22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6100	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6200	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

### LEGEND

**Bhp** — Brake Horsepower

**NOTES:**

1. **Boldface** indicates field-supplied drive required

2. **Shaded** indicates field-supplied motor and drive required.

3. Values include losses for filters, unit casing, and wet coils

4.  indicates maximum usable bhp

5. Maximum continuous bhp: 4.2.

6. Motor drive range: 860 to 1080 rpm. All other rpms require a field-supplied drive

7. Use of field-supplied motor may affect wire sizing. Contact your distributor to verify.

8. Extensive motor and electrical testing on these units ensures that the full horsepower range of the motor can be utilized with confidence. Using your fan motors up to the horsepower ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.

9. To convert bhp to watts:

$$\text{Watts input} = \frac{\text{Bhp} \times 746}{\text{Motor efficiency}}$$

Motor efficiency = 85

580D150 (12½ TON)																				
AIRFLOW (Cfm)	ALTERNATE BELT DRIVE MOTOR																			
	External Static Pressure (in. wg)																			
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8		2.0	
	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
3700	729	1.36	790	1.58	847	1.79	902	2.06	955	2.29	1008	2.55	1060	2.80	1108	3.05	1152	3.27	1190	3.46
3800	745	1.46	805	1.69	861	1.89	915	2.17	967	2.41	1019	2.67	1070	2.94	1118	3.19	1163	3.44	1203	3.65
3900	761	1.56	820	1.80	875	2.01	928	2.29	979	2.55	1029	2.80	1079	3.07	1128	3.34	1173	3.60	1214	3.83
4000	777	1.67	836	1.92	889	2.14	941	2.40	991	2.68	1040	2.94	1089	3.22	1137	3.49	1183	3.76	1225	4.00
4100	793	1.79	851	2.05	904	2.27	955	2.52	1004	2.82	1052	3.08	1100	3.36	1147	3.65	1193	3.93	1236	4.19
4200	810	1.91	867	2.18	918	2.41	968	2.65	1017	2.96	1064	3.23	1110	3.51	1157	3.81	1202	4.09	1245	4.38
4300	826	2.04	883	2.32	933	2.55	982	2.79	1030	3.11	1076	3.40	1121	3.67	1167	3.97	1212	4.27	1255	4.56
4400	842	2.17	898	2.46	948	2.70	996	2.93	1043	3.25	1088	3.56	1133	3.84	1178	4.14	1222	4.44	1265	4.74
4500	859	2.31	914	2.60	962	2.85	1010	3.09	1056	3.40	1101	3.73	1144	4.00	1188	4.31	1232	4.62	1274	4.93
4600	876	2.45	930	2.76	977	3.01	1024	3.26	1070	3.55	1114	3.90	1157	4.19	1202	4.49	1242	4.81	1284	5.13
4700	892	2.60	945	2.91	992	3.18	1039	3.43	1083	3.71	1126	4.07	1169	4.38	1210	4.68	1252	5.00	1284	5.38
4800	909	2.77	961	3.07	1008	3.36	1053	3.61	1097	3.88	1140	4.25	1181	4.58	1222	4.87	1263	5.20	—	—
4900	926	2.93	977	3.24	1024	3.54	1068	3.80	1111	4.06	1153	4.41	1194	4.77	1234	5.09	1274	5.41	—	—
5000	942	3.11	993	3.41	1039	3.73	1080	3.99	1125	4.25	1166	4.59	1207	4.97	1247	5.31	1286	5.62	—	—
5100	959	3.29	1009	3.60	1055	3.92	1097	4.19	1139	4.46	1180	4.78	1220	5.18	1263	5.52	—	—	—	—
5200	976	3.47	1025	3.78	1071	4.12	1112	4.40	1153	4.67	1194	4.98	1234	5.28	1274	5.64	—	—	—	—
5300	993	3.67	1041	3.98	1086	4.33	1127	4.61	1168	4.90	1208	5.19	1249	5.58	—	—	—	—	—	—
5400	1010	3.87	1057	4.18	1102	4.54	1142	4.84	1182	5.13	1224	5.58	—	—	—	—	—	—	—	—
5500	1027	4.07	1073	4.39	1118	4.76	1157	5.07	1197	5.36	1235	5.64	—	—	—	—	—	—	—	—
5600	1043	4.29	1090	4.61	1133	4.99</														

NOTE: Refer to pages 36 and 37 for Air Delivery tables for 180-300 units.

### AIR DELIVERY — HORIZONTAL DISCHARGE UNITS

580D036 (3 TON)								
AIRFLOW (Cfm)	STANDARD DIRECT DRIVE MOTOR							
	Low Speed				High Speed			
	208 V		230,460, 575 V		208 V		230,460, 575 V	
	ESP	Bhp	ESP	Bhp	ESP	Bhp	ESP	Bhp
900	0.53	0.17	0.55	0.19	0.63	0.21	0.64	0.25
1000	0.48	0.20	0.51	0.22	0.57	0.23	0.60	0.27
1100	0.43	0.21	0.45	0.24	0.52	0.25	0.54	0.29
1200	0.36	0.23	0.40	0.25	0.47	0.27	0.47	0.31
1300	0.28	0.24	0.32	0.26	0.38	0.29	0.41	0.32
1400	0.20	0.26	0.24	0.28	0.31	0.30	0.32	0.33
1500	0.11	0.27	0.14	0.33	0.21	0.31	0.22	0.34

#### LEGEND

Bhp — Brake Horsepower  
ESP — External Static Pressure (in. wg)

NOTE: Values include losses for filters, unit casing, and wet coils

AIRFLOW (Cfm)		ALTERNATE BELT DRIVE MOTOR																						
		External Static Pressure (in. wg)																						
		0.2		0.3		0.4		0.5		0.6		0.7		0.8		0.9		1.0		1.1		1.2		
Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	
900	—	—	—	777	0.22	831	0.25	885	0.27	923	0.32	960	0.35	995	0.38	1068	0.42	1117	0.45	1165	0.48			
950	—	—	728	0.17	783	0.25	837	0.27	890	0.29	931	0.34	971	0.38	1000	0.41	1071	0.44	1120	0.47	1170	0.51		
1000	—	—	738	0.19	800	0.26	848	0.29	895	0.31	936	0.35	977	0.39	1020	0.44	1076	0.48	1123	0.52	1173	0.56		
1050	—	—	748	0.21	808	0.27	855	0.30	902	0.33	949	0.38	995	0.42	1045	0.47	1081	0.50	1128	0.54	1176	0.58		
1100	—	—	758	0.23	812	0.29	863	0.32	914	0.35	960	0.39	1005	0.43	1052	0.49	1091	0.52	1138	0.56	1186	0.60		
1150	—	—	766	0.26	821	0.30	874	0.34	926	0.38	970	0.42	1013	0.45	1066	0.50	1106	0.56	1155	0.60	1204	0.65		
1200	710	0.23	780	0.28	840	0.32	889	0.36	938	0.40	988	0.45	1038	0.50	1076	0.53	1110	0.59	1160	0.63	1210	0.68		
1250	731	0.25	795	0.30	850	0.32	900	0.39	950	0.43	998	0.48	1045	0.52	1085	0.56	1135	0.62	1185	0.67	1236	0.71		
1300	752	0.27	808	0.32	868	0.37	916	0.41	963	0.45	1012	0.51	1061	0.56	1094	0.61	1141	0.65	1190	0.70	1238	0.75		
1350	759	0.29	828	0.35	878	0.39	922	0.44	966	0.48	1015	0.53	1064	0.58	1104	0.65	1145	0.68	1193	0.73	1241	0.78		
1400	776	0.31	845	0.38	891	0.42	937	0.47	983	0.51	1027	0.56	1071	0.60	1108	0.67	1149	0.70	1196	0.75	1243	0.80		
1450	795	0.35	853	0.40	902	0.45	951	0.50	999	0.55	1040	0.60	1081	0.64	1112	0.68	1152	0.72	1199	0.76	1243	0.80		
1500	816	0.38	870	0.43	924	0.48	969	0.53	1014	0.58	1056	0.63	1097	0.68	1117	0.70	1155	0.74	1201	0.78	1245	0.82		

#### LEGEND

Bhp — Brake Horsepower

NOTES:  
1. **Boldface** indicates field-supplied motor and drive required (See Note 5.)  
2. Maximum usable bhp indicates maximum usable bhp

3. **Maximum usable bhp is 0.66** Extensive motor and electrical testing on these units ensures that the full horsepower range of the motor can be utilized with confidence. Using your fan motors up to the horsepower ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.

4. Values include losses for filters, unit casing, and wet coils

5. Motor drive range: 558 to 1326 rpm. All other rpms require field-supplied drive. In order to achieve rpms over 790, reversal of the evaporator-fan and fan-motor pulleys in the field will be necessary. See Fan Rpm tables on page 38.

6. To convert bhp to watts:

$$\text{Watts input} = \frac{\text{Bhp} \times 746}{\text{Motor efficiency}}$$

Motor efficiency = 63

AIRFLOW (Cfm)		STANDARD DIRECT DRIVE MOTOR								
		Low Speed				High Speed				
		208 V		230, 460, 575 V		208 V		230, 460, 575 V		
ESP	Bhp	ESP	Bhp	ESP	Bhp	ESP	Bhp	ESP	Bhp	
1200	0.78	0.44	0.85	0.48	0.92	0.56	1.01	0.65		
1300	0.70	0.48	0.76	0.50	0.84	0.60	0.94	0.68		
1400	0.62	0.50	0.68	0.54	0.78	0.63	0.87	0.69		
1500	0.52	0.53	0.59	0.58	0.69	0.65	0.78	0.72		
1600	0.44	0.57	0.50	0.60	0.61	0.68	0.70	0.74		
1700	0.34	0.58	0.40	0.63	0.53	0.69	0.62	0.76		
1800	0.22	0.61	0.30	0.65	0.45	0.71	0.54	0.78		
1900	0.10	0.63	0.20	0.68	0.37	0.73	0.48	0.79		
2000	—	—	0.09	0.69	0.29	0.74	0.39	0.81		

#### LEGEND

Bhp — Brake Horsepower  
ESP — External Static Pressure (in. wg)

NOTE: Values include losses for filters, unit casing, and wet coils

## AIR DELIVERY — HORIZONTAL DISCHARGE UNITS (cont)

580D048 (4 TON)																				
AIRFLOW (Cfm)	ALTERNATE BELT DRIVE MOTOR																			
	External Static Pressure (in. wg)																			
	0.1		0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8	
	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
1200	569	0.18	641	0.23	761	0.34	859	0.46	943	0.58	1030	0.70	1155	0.87	—	—	—	—	—	—
1300	604	0.22	673	0.28	788	0.39	887	0.52	968	0.65	1044	0.77	1128	0.91	1245	1.10	—	—	—	—
1400	640	0.27	705	0.33	817	0.45	914	0.59	996	0.72	1069	0.86	1139	0.99	1218	1.14	—	—	—	—
1500	676	0.32	738	0.38	847	0.51	940	0.65	1024	0.81	1095	0.95	1162	1.09	1324	1.24	—	—	—	—
1600	713	0.38	772	0.44	877	0.58	967	0.73	1051	0.89	1123	1.05	1188	1.20	1402	1.39	—	—	—	—
1700	750	0.45	806	0.51	908	0.66	997	0.81	1077	0.98	1151	1.15	1235	1.34	1479	1.53	—	—	—	—
1800	788	0.52	841	0.59	939	0.75	1026	0.91	1104	1.07	1208	1.19	1283	1.34	1559	1.54	—	—	—	—
1900	826	0.60	876	0.68	971	0.84	1056	1.01	1132	1.18	1285	1.30	1354	1.49	1639	1.69	—	—	—	—
2000	864	0.70	912	0.77	1004	0.94	1087	1.12	—	—	—	—	—	—	—	—	—	—	—	

### LEGEND

**Bhp** — Brake Horsepower

### NOTES:

1 **Boldface** indicates field-supplied drive required (See Note 6)

2 **██████████** indicates field-supplied motor and drive required

3 Extensive motor and electrical testing on these units ensures that the full horsepower range of the motor can be utilized with confidence. Using your fan motors up to the horsepower ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected

4 \_\_\_\_\_ indicates maximum usable bhp

5 Maximum continuous bhp: 1.2

6 Motor drive range: 970 to 1310 rpm. All other rpms require field-supplied drive

7 Values include losses for filters, unit casing, and wet coils

8 Use of a field-supplied motor may affect wire sizing. Contact your distributor to verify

9 To convert bhp to watts:

$$\text{Watts input} = \frac{\text{Bhp} \times 746}{\text{Motor efficiency}}$$

Motor efficiency = 79

580D060 (5 TON)																			
AIRFLOW (Cfm)	STANDARD DIRECT DRIVE MOTOR																		
	Low Speed								Medium Speed								High Speed		
	208 V				230, 460, 575 V				208 V				230, 460, 575 V				208 V		230, 460, 575 V
	ESP	Bhp	ESP	Bhp	ESP	Bhp	ESP	Bhp	ESP	Bhp	ESP	Bhp	ESP	Bhp	ESP	Bhp	ESP	Bhp	
1500	0.80	0.64	1.05	0.71	1.05	0.68	1.15	0.75	1.20	0.82	1.25	0.90	—	—	—	—	—	—	
1600	0.60	0.64	0.95	0.71	0.95	0.70	1.07	0.77	1.12	0.84	1.18	0.93	—	—	—	—	—	—	
1700	0.38	0.64	0.80	0.71	0.80	0.75	0.98	0.83	1.04	0.86	1.10	0.95	—	—	—	—	—	—	
1800	0.16	0.64	0.67	0.71	0.67	0.79	0.88	0.87	0.93	0.88	1.02	0.97	—	—	—	—	—	—	
1900	0.05	0.64	0.50	0.70	0.50	0.83	0.76	0.92	0.81	0.92	0.93	1.02	—	—	—	—	—	—	
2000	—	—	0.34	0.64	0.34	0.84	0.65	0.93	0.70	0.94	0.83	1.04	—	—	—	—	—	—	
2100	—	—	0.15	0.57	0.15	0.86	0.50	0.96	0.57	0.99	0.73	1.09	—	—	—	—	—	—	
2200	—	—	0.05	0.53	0.05	0.87	0.37	0.95	0.45	1.02	0.62	1.12	—	—	—	—	—	—	
2300	—	—	—	—	—	—	0.23	0.92	0.30	1.04	0.51	1.15	—	—	—	—	—	—	
2400	—	—	—	—	—	—	0.15	0.89	0.17	1.06	0.40	1.18	—	—	—	—	—	—	
2500	—	—	—	—	—	—	0.05	0.87	0.05	1.08	0.28	1.19	—	—	—	—	—	—	

### LEGEND

**Bhp** — Brake Horsepower

**ESP** — External Static Pressure (in. wg)

NOTE: Values include losses for filters, unit casing, and wet coils

AIRFLOW (Cfm)	ALTERNATE BELT DRIVE MOTOR																			
	External Static Pressure (in. wg)																			
	0.1		0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8	
	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp		
1500	720	0.34	776	0.39	886	0.53	978	0.66	1059	0.80	1142	0.96	1207	1.11	1245	1.20	1251	1.21	1174	1.22
1600	760	0.40	814	0.46	915	0.59	1010	0.74	1089	0.89	1165	1.04	1240	1.22	1296	1.37	1329	1.46	1330	1.61
1700	801	0.47	853	0.54	950	0.68	1044	0.84	1120	0.99	1190	1.14	1266	1.33	1331	1.50	1381	1.65	—	—
1800	842	0.55	891	0.62	985	0.77	1075	0.94	1151	1.09	1221	1.26	1287	1.42	1358	1.63	—	—	—	—
1900	883	0.64	931	0.72	1019	0.87	1103	1.03	1184	1.21	1252	1.38	1315	1.55	1380	1.74	—	—	—	—
2000	924	0.74	970	0.82	1054	0.97	1134	1.14	1217	1.34	1283	1.51	1346	1.69	1405	1.82	1443	1.96	1444	2.02
2100	965	0.85	1010	0.93	1090	1.09	1170	1.27	1247	1.47	1315	1.65	—	—	—	—	—	—	—	—
2200	1007	0.97	1050	1.06	1128	1.22	1205	1.40	1275	1.59	—	—	—	—	—	—	—	—	—	—
2300	1049	1.10	1090	1.19	1166	1.36	1239	1.55	1306	1.74	—	—	—	—	—	—	—	—	—	—
2400	1090	1.24	1131	1.34	1204	1.51	1273	1.70	—	—	—	—	—	—	—	—	—	—	—	—
2500	1132	1.39	1172	1.49	1243	1.68	—	—	—	—	—	—	—	—	—	—	—	—	—	—

### LEGEND

**Bhp** — Brake Horsepower

### NOTES:

1 **Boldface** indicates field-supplied drive required (See Note 5)

2 **██████████** indicates field-supplied motor and drive required

3 \_\_\_\_\_ indicates maximum usable bhp

4 Maximum usable bhp is 1.80. Extensive motor and drive testing on these units ensures that the full horsepower range of the motor can be utilized with confidence. Using your fan motors up to the horsepower rating shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected

5 Motor drive range: 900 to 1300 rpm. All other rpms require field-supplied drive

6 Values include losses for filters, unit casing, and wet coils

7 To convert bhp to watts:

$$\text{Watts input} = \frac{\text{Bhp} \times 746}{\text{Motor efficiency}}$$

Motor efficiency = 81

## AIR DELIVERY — HORIZONTAL DISCHARGE UNITS (cont)

580D072 (6 TON)																		
AIRFLOW (Cfm)	STANDARD BELT DRIVE MOTOR																	
	External Static Pressure (in. wg)																	
	0.1		0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6	
	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
1800	<b>852</b>	<b>0.55</b>	<b>905</b>	<b>0.62</b>	<b>1002</b>	<b>0.78</b>	1084	0.93	1163	1.10	1235	1.29	1303	1.48	1371	1.69	1433	1.90
1900	<b>894</b>	<b>0.64</b>	<b>945</b>	<b>0.72</b>	<b>1037</b>	<b>0.88</b>	1119	1.04	1194	1.21	1266	1.40	1330	1.59	1396	1.81	1450	2.03
2000	<b>936</b>	<b>0.74</b>	<b>984</b>	<b>0.82</b>	<b>1072</b>	<b>0.98</b>	1154	1.16	1226	1.33	1297	1.53	1362	1.73	1422	1.94	<b>1485</b>	<b>2.16</b>
2100	<b>978</b>	<b>0.85</b>	<b>1024</b>	<b>0.93</b>	1108	1.10	1190	1.29	1259	1.47	1327	1.66	1393	1.87	1452	2.08	<b>1510</b>	<b>2.31</b>
2200	<b>1021</b>	<b>0.97</b>	<b>1064</b>	<b>1.05</b>	1145	1.22	1225	1.43	1294	1.62	1359	1.81	1423	2.02	<b>1483</b>	<b>2.24</b>		
2300	<b>1064</b>	<b>1.10</b>	1104	1.18	1183	1.36	1260	1.57	1330	1.78	1392	1.97	1454	2.18				
2400	1107	1.24	1145	1.32	1222	1.52	1296	1.73	1365	1.94	1426	2.15	<b>1485</b>	<b>2.36</b>				
2500	1150	1.39	1186	1.48	1262	1.68	1331	1.89	1400	2.12	<b>1461</b>	<b>2.34</b>						
2600	1193	1.56	1228	1.65	1301	1.86	1367	2.07	1435	2.31								
2700	1237	1.74	1269	1.83	1341	2.05	1404	2.26										
2800	1280	1.94	1311	2.03	1381	2.25												
2900	1324	2.15	1354	2.24														
3000	1368	2.37																

### LEGEND

Bhp — Brake Horsepower

### NOTES:

- Boldface** indicates field-supplied drive required.
- ██████████** indicates field-supplied motor and drive required
- indicates maximum usable bhp
- Maximum continuous bhp: 2.4
- Motor drive range: 1070 to 1460 rpm All other rpms require a field-supplied drive.
- Values include losses for filters, unit casing, and wet coils.
- Use of field-supplied motor may affect wire sizing. Contact your distributor to verify

8 Extensive motor and electrical testing on these units ensures that the full horsepower range of the motor can be utilized with confidence. Using your fan motors up to the horsepower ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.

9. There is no factory-installed alternate motor or drive available for the 580D072 units

10 To convert bhp to watts:

$$\text{Bhp} \times 746$$

Watts input =  $\frac{\text{Motor efficiency}}{\text{Motor efficiency} = 81}$

580D090 (7½ TON)																		
AIRFLOW (Cfm)	STANDARD BELT DRIVE MOTOR AND ALTERNATE BELT DRIVE																	
	External Static Pressure (in. wg)																	
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6			
	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
2200	<b>499</b>	<b>0.50</b>	<b>580</b>	<b>0.70</b>	652	0.94	717	1.17	779	1.43	—	—	—	—	—	—	—	—
2300	<b>513</b>	<b>0.55</b>	592	0.76	663	1.00	727	1.26	786	1.49	—	—	—	—	—	—	—	—
2400	<b>528</b>	<b>0.60</b>	606	0.83	674	1.06	738	1.34	795	1.58	<b>853</b>	<b>1.88</b>	—	—	—	—	—	—
2500	<b>542</b>	<b>0.66</b>	619	0.90	686	1.13	748	1.41	806	1.68	<b>859</b>	<b>1.94</b>	919	2.37	—	—	—	—
2600	<b>557</b>	<b>0.72</b>	634	0.97	698	1.21	759	1.49	816	1.79	868	2.04	921	2.37	—	—	—	—
2700	<b>573</b>	<b>0.79</b>	648	1.05	711	1.29	770	1.58	827	1.88	878	2.16	—	—	—	—	—	—
2800	<b>588</b>	<b>0.86</b>	662	1.13	723	1.38	782	1.66	837	1.98	889	2.29	—	—	—	—	—	—
2900	604	0.94	676	1.21	737	1.48	794	1.76	848	2.08	—	—	—	—	—	—	—	—
3000	620	1.02	690	1.30	750	1.58	806	1.86	859	2.18	—	—	—	—	—	—	—	—
3100	636	1.11	704	1.39	764	1.69	818	1.97	870	2.29	—	—	—	—	—	—	—	—
3200	652	1.21	718	1.49	778	1.80	831	2.09	882	2.40	—	—	—	—	—	—	—	—
3300	668	1.31	732	1.59	793	1.92	844	2.21	—	—	—	—	—	—	—	—	—	—
3400	684	1.41	747	1.70	807	2.04	857	2.35	—	—	—	—	—	—	—	—	—	—
3500	701	1.53	762	1.82	821	2.16	—	—	—	—	—	—	—	—	—	—	—	—
3600	717	1.65	777	1.94	835	2.29	—	—	—	—	—	—	—	—	—	—	—	—
3700	733	1.77	792	2.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3800	750	1.90	807	2.21	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3900	767	2.04	822	2.35	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4000	783	2.18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4100	800	2.34	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4200	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4300	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

### LEGEND

Bhp — Brake Horsepower

### NOTES:

- Boldface** indicates field-supplied drive required
- ██████████** indicates field-supplied motor and drive required
- indicates maximum usable bhp
- Maximum continuous bhp: 2.4
- Standard drive range: 590 to 840 rpm. Alternate drive range: 685 to 935 rpm All other rpms require a field-supplied drive.
- Values include losses for filters, unit casing, and wet coils

7 Use of field-supplied motor may affect wire sizing. Contact your distributor to verify

8 Extensive motor and electrical testing on these units ensures that the full horsepower range of the motor can be utilized with confidence. Using your fan motors up to the horsepower ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected

9. To convert bhp to watts:

$$\text{Bhp} \times 746$$

Watts input =  $\frac{\text{Motor efficiency}}{\text{Motor efficiency} = 83}$

## AIR DELIVERY – HORIZONTAL DISCHARGE UNITS (cont)

580D102 (8½ TON)																	
AIRFLOW (Cfm)	STANDARD BELT DRIVE MOTOR																
	External Static Pressure (in. wg)																
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		
	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	
2200	<b>499</b>	0.50	580	0.70	<b>652</b>	0.94	717	1.17	779	1.43	—	—	—	—	—	—	
2300	<b>513</b>	0.55	<b>592</b>	0.76	<b>663</b>	1.00	727	1.26	786	1.49	—	—	—	—	—	—	
2400	<b>528</b>	0.60	<b>606</b>	0.83	<b>674</b>	1.06	738	1.34	795	1.58	853	1.88	—	—	—	—	
2500	<b>542</b>	0.66	<b>619</b>	0.90	686	1.13	748	1.41	806	1.68	859	1.94	919	2.37	—	—	
2600	<b>557</b>	0.72	<b>634</b>	0.97	698	1.21	759	1.49	816	1.79	868	2.04	921	2.37	—	—	
2700	<b>573</b>	0.79	<b>648</b>	1.05	711	1.29	770	1.58	827	1.88	878	2.16	—	—	—	—	
2800	<b>588</b>	0.86	<b>662</b>	1.13	723	1.38	782	1.66	837	1.98	889	2.29	—	—	—	—	
2900	<b>604</b>	0.94	<b>676</b>	1.21	737	1.48	794	1.76	848	2.08	—	—	—	—	—	—	
3000	<b>620</b>	1.02	690	1.30	750	1.58	806	1.86	859	2.18	—	—	—	—	—	—	
3100	<b>636</b>	1.11	704	1.39	764	1.69	818	1.97	870	2.29	—	—	—	—	—	—	
3200	<b>652</b>	1.21	718	1.49	778	1.80	831	2.09	882	2.40	—	—	—	—	—	—	
3300	<b>668</b>	1.31	732	1.59	793	1.92	844	2.21	—	—	—	—	—	—	—	—	
3400	<b>684</b>	1.41	747	1.70	807	2.04	857	2.35	—	—	—	—	—	—	—	—	
3500	701	1.53	762	1.82	821	2.16	—	—	244	2.44	—	—	—	—	—	—	
3600	717	1.65	777	1.94	835	2.29	—	—	263	2.55	—	—	—	—	—	—	
3700	733	1.77	792	2.07	—	—	—	—	279	2.44	—	—	—	—	—	—	
3800	750	1.90	807	2.21	—	—	—	—	294	2.34	—	—	—	—	—	—	
3900	767	2.04	822	2.35	—	—	—	—	309	2.24	—	—	—	—	—	—	
4000	783	2.18	—	—	250	2.50	—	—	324	2.14	—	—	—	—	—	—	
4100	800	2.34	—	—	264	2.60	—	—	339	2.04	—	—	—	—	—	—	
4200	—	—	—	—	269	2.62	—	—	343	2.06	—	—	—	—	—	—	
4300	—	—	—	—	270	2.65	—	—	347	2.07	—	—	—	—	—	—	

### LEGEND

Bhp — Brake Horsepower

#### NOTES:

1. **Boldface** indicates field-supplied drive required
2. **Shading** indicates field-supplied motor and drive required
3. **Shading** indicates field-supplied motor and drive required
4. \_\_\_\_\_ indicates maximum usable bhp of standard motor
5. \_\_\_\_\_ indicates maximum usable bhp of alternate motor
6. Maximum continuous bhp of standard motor: 2.4 Maximum continuous bhp of alternate motor: 2.9
7. Standard motor drive range: 685 to 935 rpm Alternate motor drive range: 835 to 1085 All other rpms will require a field-supplied drive

8 Extensive motor and electrical testing on these units ensures that the full horsepower range of the motor can be utilized with confidence. Using your fan motors up to the horsepower ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected

9 There is no factory-installed alternate motor or drive available for the 580D102 units

10 To convert bhp to watts:

$$\text{Watts input} = \frac{\text{Bhp} \times 746}{\text{Motor efficiency}}$$

Motor efficiency = 83

## 580D120 (10 TON)

AIRFLOW (Cfm)	STANDARD AND ALTERNATE BELT DRIVE MOTORS																	
	External Static Pressure (in. wg)																	
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8	
	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
3000	<b>552</b>	0.68	<b>632</b>	0.87	701	1.05	761	1.22	816	1.36	871	1.54	918	1.67	967	1.89	—	—
3100	<b>565</b>	0.74	<b>644</b>	0.93	711	1.12	772	1.31	825	1.45	879	1.63	928	1.78	973	1.94	—	—
3200	<b>578</b>	0.81	<b>656</b>	1.00	723	1.20	782	1.39	835	1.55	887	1.71	937	1.90	981	2.04	1026	2.26
3300	<b>591</b>	0.88	<b>668</b>	1.08	734	1.28	793	1.47	845	1.65	895	1.80	946	2.00	991	2.16	1032	2.32
3400	<b>605</b>	0.96	<b>680</b>	1.16	745	1.36	803	1.56	856	1.75	904	1.91	953	2.10	1000	2.29	1041	2.44
3500	<b>619</b>	1.04	691	1.23	755	1.44	813	1.65	867	1.86	914	2.03	961	2.20	1009	2.41	1051	2.57
3600	<b>633</b>	1.13	703	1.31	766	1.52	824	1.74	877	1.97	924	2.15	970	2.32	1017	2.53	1060	2.72
3700	<b>648</b>	1.23	714	1.39	777	1.61	835	1.85	887	2.07	935	2.28	980	2.45	1024	2.64	1069	2.87
3800	<b>662</b>	1.33	726	1.47	789	1.72	846	1.95	897	2.18	946	2.40	989	2.58	1033	2.75	1077	2.99
3900	<b>677</b>	1.44	738	1.56	801	1.82	857	2.06	908	2.29	956	2.53	1000	2.73	1042	2.91	1082	3.13
4000	<b>692</b>	1.55	750	1.66	813	1.94	868	2.17	918	2.40	967	2.66	1010	2.87	1049	3.06	1109	3.28
4100	707	1.67	762	1.76	825	2.05	878	2.28	923	2.53	977	2.78	1021	2.92	1056	3.12	1136	3.34
4200	722	1.80	775	1.87	837	2.16	889	2.40	941	2.66	997	2.91	1032	3.07	1082	3.27	1166	3.49
4300	737	1.94	787	1.99	848	2.27	900	2.52	952	2.80	1004	3.04	1064	3.22	1122	3.42	1202	3.64
4400	752	2.08	800	2.12	860	2.39	912	2.66	962	2.94	1024	3.24	1084	3.42	1182	3.60	1282	3.82
4500	768	2.24	814	2.25	871	2.51	924	2.80	973	3.07	1035	3.24	1104	3.42	1204	3.60	1304	3.82
4600	783	2.40	827	2.39	883	2.64	937	2.85	983	3.21	1039	3.22	1105	3.40	1205	3.58	1305	3.80
4700	—	—	<b>841</b>	<b>2.54</b>	<b>894</b>	<b>2.77</b>	<b>949</b>	<b>3.18</b>	<b>994</b>	<b>3.56</b>	—	—	—	—	—	—	—	—
4800	—	—	<b>855</b>	<b>2.69</b>	<b>909</b>	<b>3.03</b>	<b>961</b>	<b>3.28</b>	<b>1005</b>	<b>3.61</b>	—	—	—	—	—	—	—	—
4900	—	—	<b>868</b>	<b>2.85</b>	<b>919</b>	<b>3.15</b>	<b>972</b>	<b>3.30</b>	—	—	—	—	—	—	—	—	—	—
5000	—	—	<b>882</b>	<b>3.03</b>	<b>931</b>	<b>3.22</b>	—	—	—	—	—	—	—	—	—	—	—	—

### LEGEND

Bhp — Brake Horsepower

#### NOTES:

1. **Boldface** indicates field-supplied drive required with standard motor
2. **Shading** indicates alternate motor and drive required.
3. **Shading** indicates field-supplied motor and drive required
4. \_\_\_\_\_ indicates maximum usable bhp of standard motor
5. \_\_\_\_\_ indicates maximum usable bhp of alternate motor
6. Maximum continuous bhp of standard motor: 2.4 Maximum continuous bhp of alternate motor: 2.9
7. Standard motor drive range: 685 to 935 rpm Alternate motor drive range: 835 to 1085 All other rpms will require a field-supplied drive

8 Values include losses for filters, unit casing, and wet coils

9 Use of field-supplied motor may affect wire sizing. Contact your distributor to verify

10 Extensive motor and electrical testing on these units ensures that the full horsepower range of the motor can be utilized with confidence. Using your fan motors up to the horsepower ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected

11 To convert bhp to watts:

$$\text{Watts input} = \frac{\text{Bhp} \times 746}{\text{Motor efficiency}}$$

Motor efficiency = 83

## AIR DELIVERY — HORIZONTAL DISCHARGE UNITS (cont)

580D150 (12½ TON)

AIRFLOW (Cfm)	STANDARD BELT DRIVE MOTOR																			
	External Static Pressure (in. wg)																			
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8		2.0	
	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
3700	677	1.20	748	1.43	810	1.65	869	1.89	928	2.17	984	2.43	1036	2.68	1080	2.90	1114	3.07	1135	3.17
3800	691	1.28	761	1.52	822	1.75	880	1.98	937	2.28	993	2.55	1046	2.81	1092	3.05	1129	3.25	1156	3.39
3900	705	1.37	773	1.62	834	1.86	891	2.08	947	2.39	1002	2.66	1055	2.94	1102	3.20	1143	3.42	1174	3.59
4000	720	1.47	786	1.71	847	1.97	902	2.19	957	2.50	1011	2.79	1064	3.07	1112	3.34	1155	3.59	1190	3.80
4100	734	1.56	800	1.82	860	2.09	914	2.31	967	2.60	1021	2.91	1072	3.20	1121	3.49	1165	3.76	1203	3.99
4200	749	1.66	813	1.92	873	2.21	926	2.44	978	2.71	1030	3.04	1081	3.34	1130	3.64	1175	3.92	1215	4.18
4300	764	1.77	826	2.04	886	2.33	938	2.57	989	2.83	1040	3.18	1090	3.48	1139	3.79	1185	4.08	1226	4.36
4400	778	1.88	840	2.16	899	2.46	951	2.71	1000	2.96	1050	3.31	1100	3.63	1148	3.94	1195	4.25	1236	4.54
4500	793	1.99	854	2.28	912	2.59	963	2.86	1012	3.09	1061	3.43	1109	3.78	1157	4.09	1203	4.42	1246	4.72
4600	808	2.11	868	2.42	925	2.73	975	3.00	1024	3.25	1071	3.56	1119	3.93	1166	4.26	1212	4.58	1255	4.91
4700	822	2.24	882	2.56	937	2.86	988	3.16	1036	3.42	1082	3.70	1129	4.09	1175	4.43	1221	4.76	1264	5.09
4800	837	2.37	896	2.71	950	3.00	1001	3.32	1048	3.59	1093	3.86	1139	4.24	1185	4.60	1230	4.93	1279	5.37
4900	852	2.51	910	2.86	963	3.15	1014	3.48	1060	3.76	1105	4.02	1150	4.38	1194	4.77	1239	5.12	1297	5.51
5000	867	2.65	924	3.01	977	3.30	1027	3.65	1073	3.94	1117	4.20	1161	4.54	1204	4.95	1248	5.37	1302	5.69
5100	882	2.79	938	3.17	990	3.46	1040	3.82	1085	4.12	1129	4.40	1172	4.71	1214	5.13	1257	5.51	1312	5.89
5200	896	2.95	952	3.33	1003	3.63	1053	4.00	1098	4.30	1141	4.60	1183	4.89	1230	5.22	1279	5.61	1327	6.01
5300	911	3.11	967	3.50	1017	3.80	1066	4.18	1111	4.50	1153	4.80	1194	5.08	1239	5.47	1287	5.87	1337	6.39
5400	926	3.27	981	3.68	1030	3.98	1079	4.35	1124	4.73	1166	5.01	1230	5.33	1287	5.87	1347	6.39	1357	6.67
5500	940	3.44	995	3.86	1044	4.17	1092	4.54	1137	4.91	1178	5.22	1230	5.61	1297	6.01	1357	6.67	1367	6.95
5600	955	3.62	1010	4.04	1058	4.38	1105	4.73	1150	5.12	1230	5.33	1297	5.61	1357	6.01	1367	6.39	1377	6.67
5700	970	3.80	1024	4.23	1072	4.59	1118	4.93	1230	5.33	1357	6.01	1367	6.39	1377	6.67	1387	7.05	1397	7.33
5800	985	3.99	1039	4.42	1086	4.80	1131	5.14	1230	5.33	1357	6.01	1367	6.39	1377	6.67	1387	7.05	1397	7.33
5900	1000	4.18	1053	4.62	1100	5.02	1230	5.33	1357	6.01	1367	6.39	1377	6.67	1387	7.05	1397	7.33	1407	7.61
6000	1015	4.39	1068	4.83	1114	5.25	1230	5.33	1357	6.01	1367	6.39	1377	6.67	1387	7.05	1397	7.33	1407	7.61
6100	1030	4.59	1083	5.04	1128	5.46	1230	5.33	1357	6.01	1367	6.39	1377	6.67	1387	7.05	1397	7.33	1407	7.61
6200	1046	4.81	1098	5.25	1142	5.67	1230	5.33	1357	6.01	1367	6.39	1377	6.67	1387	7.05	1397	7.33	1407	7.61

### LEGEND

Bhp — Brake Horsepower

#### NOTES:

1. **Boldface** indicates field-supplied drive required
2. **██████████** indicates field-supplied motor and drive required
3. **—** indicates maximum usable bhp
4. Maximum continuous bhp: 4.2.
5. Motor drive range: 860 to 1080 rpm. All other rpms require a field-supplied drive
6. Values include losses for filters, unit casing, and wet coils

7. Use of field-supplied motor may affect wire sizing. Contact your distributor to verify.

8. Extensive motor and electrical testing on these units ensures that the full horsepower range of the motor can be utilized with confidence. Using your fan motors up to the horsepower ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.

9. To convert bhp to watts:

$$\text{Bhp} \times 746$$

Watts input =  $\frac{\text{Bhp} \times 746}{\text{Motor efficiency}}$

Motor efficiency = 85

580D150 (12½ TON)

AIRFLOW (Cfm)	ALTERNATE BELT DRIVE MOTOR																			
	External Static Pressure (in. wg)																			
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8		2.0	
	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
3700	677	1.20	748	1.43	810	1.65	869	1.89	928	2.17	984	2.43	1036	2.68	1080	2.90	1114	3.07	1135	3.17
3800	691	1.28	761	1.52	822	1.75	880	1.98	937	2.28	993	2.55	1046	2.81	1092	3.05	1129	3.25	1156	3.39
3900	705	1.37	773	1.62	834	1.86	891	2.08	947	2.39	1002	2.66	1055	2.94	1102	3.20	1143	3.42	1174	3.59
4000	720	1.47	786	1.71	847	1.97	902	2.19	957	2.50	1011	2.79	1064	3.07	1112	3.34	1155	3.59	1190	3.80
4100	734	1.56	800	1.82	860	2.09	914	2.31	967	2.60	1021	2.91	1072	3.20	1121	3.49	1165	3.76	1203	3.99
4200	749	1.66	813	1.92	873	2.21	926	2.44	978	2.71	1030	3.04	1081	3.34	1130	3.64	1175	3.92	1215	4.18
4300	764	1.77	826	2.04	886	2.33	938	2.57	989	2.83	1040	3.18	1090	3.48	1139	3.79	1185	4.08	1226	4.36
4400	778	1.88	840	2.16	899	2.46	951	2.71	1000	2.96	1050	3.31	1100	3.63	1148	3.94	1194	4.25	1236	4.54
4500	793	1.99	854	2.28	912	2.59	963	2.86	1012	3.09	1061	3.43	1109	3.78	1157	4.09	1203	4.42	1246	4.72
4600	808	2.11	868	2.42	925	2.73	975	3.00	1024	3.25	1071	3.56	1119	3.93	1166	4.26	1212	4.58	1255	4.91
4700	822	2.24	882	2.56	937	2.86	988	3.16	1036	3.42	1082	3.70	1129	4.09	1175	4.43	1221	4.76	1264	5.09
4800	837	2.37	896	2.71	950	3.00	1001	3.32	1048	3.59	1093	3.86	1139	4.24	1185	4.60	1230	4.93	1279	5.37
4900	852	2.51	910	2.86	963	3.15	1014	3.48	1060	3.76	1105	4.02	1150	4.38	1194	4.77	1239	5.12	1297	5.51
5000	867	2.65	924	3.01	977	3.30	1027	3.65	1073	3.94	1117	4.20	1161	4.54	1204	4.95	1248	5.37	1302	5.69
5100	882	2.79	938	3.17	990	3.46	1040	3.82	1085	4.12	1129	4.40	1172	4.71	1214	5.13	1257	5.51	1312	5.89
5200	896	2.95	952	3.33	1003	3.63	1053	4.00	1098	4.30	1141	4.60	1183	4.89	1230	5.22	1279	5.61	1327	6.01
5300	911	3.11	967	3.50	1017	3.80	1066	4.18	1111	4.50	1153	4.80	1194	5.08	1239	5.47	1287	5.87	1337	6.39
5400	926	3.27	981	3.68	1030	3.98	1079	4.35	1124</											

## AIR DELIVERY (cont)

579E180 (15 TON)																				
AIRFLOW (Cfm)	STANDARD AND ALTERNATE BELT DRIVE MOTORS																			
	External Static Pressure (in. wg)																			
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8		2.0	
	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
4500	801	1.05	890	1.26	971	1.46	1050	1.67	1125	1.88	1200	2.12	1275	2.39	1349	2.70	1421	3.03	1490	3.39
4800	843	1.25	928	1.47	1006	1.68	1081	1.90	1153	2.13	1223	2.36	1293	2.62	1364	2.92	1433	3.24	1501	3.59
5100	885	1.47	968	1.70	1043	1.93	1114	2.16	1183	2.40	1250	2.64	1316	2.90	1382	3.18	1448	3.49	1514	3.86
5400	927	1.71	1008	1.95	1080	2.20	1148	2.44	1214	2.69	1279	2.94	1342	3.20	1403	3.47	1466	3.77	1529	4.16
5700	971	1.98	1049	2.24	1118	2.50	1134	2.75	1247	3.01	1309	3.28	1370	3.54	1429	3.81	1487	4.11	—	—
6000	1016	2.28	1091	2.55	1158	2.83	1222	3.10	1282	3.36	1342	3.64	1401	3.92	1458	4.20	—	—	—	—
6300	1059	2.60	1133	2.89	1198	3.17	1259	3.46	1318	3.74	1375	4.02	—	—	—	—	—	—	—	—
6600	1104	2.96	1174	3.26	1239	3.56	1297	3.86	1355	4.15	—	—	—	—	—	—	—	—	—	—
6900	1150	3.35	1218	3.67	1281	3.98	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7200	1194	3.77	1260	4.10	1322	4.41	1381	4.71	1440	5.01	—	—	—	—	—	—	—	—	—	—
7500	1238	4.23	1303	4.54	1362	4.84	1418	5.15	1477	5.45	—	—	—	—	—	—	—	—	—	—

### LEGEND

Bhp — Brake Horsepower

#### NOTES:

1. **Boldface** indicates alternate motor and drive

2. **Seeding** indicates field-supplied motor and drive

3. Fan performance is based on wet coils, clean filters, and casing losses

4. Refer to Specifications table for condenser fan watts input

5. Static pressure losses must be added to external static pressure before entering Air Delivery table

6. Standard motor drive range: 896 to 1161 rpm. Alternate motor drive range: 1141 to 1407. All other rpms require a field-supplied drive

7. Extensive motor and drive testing on these units ensures that the full horsepower range of the motor can be utilized with confidence. Using your fan motors up to the horsepower rating shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected

8. To convert Bhp to watts use the following equation:

$$\text{Watts input} = \frac{\text{Bhp} \times 746}{\text{Motor efficiency}}$$

Motor efficiencies:

Standard = 0.84

Alternate = 0.84

Maximum Continuous Bhp

Standard = 3.45

Alternate = 4.25

579E216, 579F240 (18 AND 20 TON)																				
AIRFLOW (Cfm)	STANDARD AND ALTERNATE BELT DRIVE MOTORS																			
	External Static Pressure (in. wg)																			
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8		2.0	
	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
6000	792	1.85	855	2.17	922	2.44	985	2.71	1044	3.04	1104	3.26	1160	3.57	1216	3.82	—	—	1327	4.34
6500	843	2.26	905	2.60	967	2.90	1027	3.22	1084	3.54	1138	3.90	1192	4.13	1249	4.45	—	—	1348	5.30
7000	898	2.57	944	2.99	1014	3.43	1070	3.86	1125	4.08	1177	4.13	1231	4.80	—	—	1324	5.44	1374	5.75
7500	947	3.23	1006	3.65	1064	4.10	1118	4.50	1169	4.82	1220	5.15	—	—	1311	5.90	1346	6.11	1393	6.50
8000	1001	3.87	1066	4.45	1115	4.79	1165	5.18	1216	5.58	—	—	1345	6.64	1394	7.05	1442	7.45	—	—
8500	1062	4.72	1115	5.13	1166	5.50	1216	6.00	—	—	—	—	1356	7.28	—	—	—	—	—	—
9000	1117	5.47	1169	5.90	1218	6.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—

### LEGEND

Bhp — Brake horsepower input to fan

#### NOTES:

1. **Boldface** indicates factory-supplied standard motor and drive

2. **Seeding** indicates factory-supplied alternate motor and drive (240 only)

3. Fan performance data that is not shaded or in boldface indicates field-supplied drive

4. Fan performance is based on wet coils, clean filters, and casing losses

5. Refer to Specifications table for condenser fan watts input

6. Static pressure losses must be added to external static pressure before entering Air Delivery table.

7. To convert Bhp to watts use the following equation:

$$\text{Watts input} = \frac{\text{Bhp} \times 746}{\text{Motor efficiency}}$$

Motor efficiencies:

Standard = 0.85

Alternate = 0.82

Maximum Continuous Bhp

5.9

8.7 (208/230 v)

9.5 (460 v)

8. Extensive motor and drive testing on these units ensures that the full horsepower range of the motor can be utilized with confidence. Using your fan motors up to the horsepower rating shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected

## AIR DELIVERY (cont)

559F300 (25 TON)

AIRFLOW (Cfm)	STANDARD AND ALTERNATE BELT DRIVE MOTORS																	
	External Static Pressure (in. wg)																	
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8	
	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
7,000	948	3.52	1016	3.82	1082	4.15	1150	4.51	1218	4.92	1284	<b>5.36</b>	1350	5.82	1417	6.28	—	—
7,500	1006	4.03	1070	4.36	1132	4.71	1194	5.10	<b>1258</b>	<b>5.52</b>	1321	5.98	1383	6.46	1447	6.72	—	—
8,000	1065	4.62	1125	4.98	1183	5.36	<b>1242</b>	<b>5.76</b>	<b>1301</b>	<b>6.20</b>	1360	6.68	1422	7.10	1477	7.72	—	—
8,500	1124	5.30	1181	5.69	<b>1236</b>	<b>6.09</b>	<b>1291</b>	<b>6.51</b>	1346	6.97	1402	7.46	1463	7.94	—	—	—	—
9,000	1183	6.06	<b>1238</b>	<b>6.48</b>	<b>1290</b>	<b>6.91</b>	1342	7.36	1412	7.82	1473	8.30	1534	8.78	1499	8.88	—	—
9,500	1242	6.92	<b>1295</b>	<b>7.38</b>	1345	7.83	—	—	1492	9.32	—	—	—	—	—	—	—	—
10,000	1302	7.88	1353	8.37	—	—	—	—	1493	9.86	—	—	—	—	—	—	—	—
10,500	1362	8.94	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11,000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11,250	—	—	1498	11.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—

### LEGEND

**Bhp** — Brake horsepower input to fan

#### NOTES:

- 1 **Boldface** indicates factory-supplied standard motor and drive
- 2 **Shaded** indicates factory-supplied alternate motor and drive
- 3 Fan performance data that is not shaded or in boldface indicates field-supplied drive
- 4 Fan performance is based on wet coils, clean filters, and casing losses
- 5 Refer to Specifications table for condenser fan watts input
- 6 Static pressure losses must be added to external static pressure before entering Air Delivery table

7 To convert Bhp to watts use the following equation:

$$\text{Watts input} = \frac{\text{Bhp} \times 746}{\text{Motor efficiency}}$$

Motor efficiencies:      Maximum Continuous Bhp

Standard = 0.83	8.7 (208/230 v)
—	9.5 (460 v)
Alternate = 0.87	10.2 (208/230 v)
—	11.8 (460 v)

- 8 Extensive motor and drive testing on these units ensures that the full horsepower range of the motor can be utilized with confidence. Using your fan motors up to the horsepower rating shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.

## FAN RPM AT FAN PULLEY SETTINGS, 580D036 — VARIABLE MOTOR PULLEY

UNIT 580D	MOTOR/DRIVE	MOTOR PULLEY TURNS OPEN										
		0	1/2	1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5
036	Alt	790	767	744	721	697	674	651	628	604	581	558

## FAN RPM AT FAN PULLEY SETTINGS, 580D036 — VARIABLE FAN PULLEY

UNIT 580D	MOTOR/DRIVE	FAN PULLEY TURNS OPEN										
		0	1/2	1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5
036	Alt	936	964	994	1026	1061	1097	1136	1179	1224	1273	1326

FAN RPM AT MOTOR PULLEY SETTINGS\* — 580D048-150, 579E180

UNIT	MOTOR PULLEY TURNS OPEN												
	0	1/2	1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6
580D048†	1310	1275	1240	1210	1175	1140	1106	1070	1040	1005	970	—	—
580D060†	1300	1260	1220	1180	1140	1100	1060	1020	980	940	900	—	—
580D072**	1460	1421	1382	1343	1304	1265	1230	1187	1148	1109	1070	—	—
580D090**	840	815	790	765	740	715	690	665	635	615	590	—	—
580D090††	935	910	885	860	835	810	785	760	735	710	685	—	—
580D102**	935	910	885	860	835	810	785	760	735	710	685	—	—
580D120**	935	910	885	860	835	810	785	760	735	710	685	—	—
580D120†	1085	1060	1035	1010	985	960	935	910	885	860	835	—	—
580D150**	1080	1060	1035	1015	990	970	950	925	905	880	860	—	—
580D150†	1260	1220	1185	1155	1130	1100	1075	1045	1015	990	960	930	900
579E180**	1161	1134	1108	1081	1055	1028	1002	975	949	922	896	—	—
579E180†	1407	1380	1353	1327	1300	1274	1274	1221	1194	1168	1141	—	—

\*Approximate fan rpm shown.

†Indicates alternate motor and drive package

\*\*Indicates standard motor and drive package.

††Indicates alternate drive package only

ACCESSORY/FIOP ECONOMIZER  
STATIC PRESSURE DROP (in. wg)

UNIT	UNIT VOLTAGE	CFM	ECONOMIZER
580D036-072	All	900	.05
		1,200	.05
		1,400	.05
		1,600	.05
		1,800	.05
		2,000	.05
		2,200	.05
		2,400	.05
580D090-150	All	2,600	.05
		2,200	.02
		2,500	.02
		3,000	.03
		3,500	.04
		4,000	.05
		4,500	.06
		5,000	.07
579E180	All	5,500	.08
		6,000	.09
		6,000	.09
		7,000	.11
		9,000	.11
579E216/ 579F240,300	All	4,000	.03
		5,000	.05
		6,000	.07
		7,000	.09
		8,000	.10
		9,000	.11
		10,000	.12
		11,000	.13

FIOP — Factory-Installed Option

**ELECTRICAL DATA — 580D036-150**

UNIT 580D	NOMINAL VOLTAGE (60 Hz)	IFM TYPE	VOLTAGE RANGE		COMPR (each)		OFM	IFM	COMBUSTION FAN MOTOR	POWER SUPPLY		DISCONNECT SIZE*	
			Min	Max	RLA	LRA				FLA	MCA	MOCPT†	FLA
036 (3 Tons)	208/230 (single phase)	Std	187	254	17.9	93	1.9	2.8	57	27 1/27 1	35/35	26/26	105/105
		Alt						3.8		28.1/28 1	35/35	27/27	107/107
	208/230 (3 phase)	Std	187	254	11.2	80	1.9	2.8	57	18.7/18.7	25/25	18/18	92/92
		Alt						3.8		19.7/19 7	25/25	19/19	94/94
	460 (3 phase)	Std	414	508	6.1	40	1.0	1.5	30	10 1	15	10	46
		Alt						1.9		10.5	15	10	46
	575 (3 phase)	Std	518	632	4.5	29	1.9	2.8	57	7 5	15	7	34
		Alt						3.8		7 9	15	8	34
048 (4 Tons)	208/230 (single phase)	Std	187	254	24.8	127	1.9	3.8	57	36 7/36.7	45/45	35/35	141/141
		Alt						5.7		38 6/38 6	45/45	37/37	144/144
	208/230 (3 phase)	Std	187	254	15.7	99	1.9	3.8	57	25 3/25 3	30/30	25/25	113/113
		Alt						5.7		27 2/27.2	35/35	27/27	116/116
	460 (3 phase)	Std	414	508	7.8	50	1.0	1.9	30	12.6	15	12	56
		Alt						2.8		13.5	20	13	58
	575 (3 phase)	Std	518	632	5.5	40	1.9	3.8	57	9 2	15	9	45
		Alt						5.7		9 9	15	10	47
060 (5 Tons)	230 (single phase)	Std and Alt	187	254	27.8	141	1.9	8.8	57	45 5	60	44	190
	208/230 (3 phase)		187	254	19.2	110	1.9	4.0	57	29 9/29 9	35/35	29/29	141/141
	460 (3 phase)		414	508	9.6	55	1.0	1.8	30	14 8	20	14	75
	575 (3 phase)		518	632	8.3	45	1.9	8.8	57	14 7	20	14	64
072 (6 Tons)	208/230 (3 phase)	Std	187	254	21.9	142	1.9	5.8	57	35 1/35 1	40/40	34/34	188/188
	460 (3 phase)		414	508	10.4	72	1.0	2.6	30	16 6	20	16	95
	575 (3 phase)		518	632	9.6	58.5	1.9	11.0	.57	17 2	20	17	81
090 (7½ Tons)	208/230 (3 phase)	Std	187	254	13.7	82	3.0	5.8	.57	39 6/39.6	45/45	42/42	223/223
		Alt								39 6/39.6	45/45	42/42	223/223
	460 (3 phase)	Std	414	508	6.9	41	1.5	2.6	30	19 6	25	21	112
		Alt								19.6	25	21	112
102 (8½ Tons)	208/230 (3 phase)	Std	518	632	4.9	30	1.5	2.6	30	14 3	20	15	84
	460 (3 phase)									14 3	20	15	84
	575 (3 phase)												
120 (10 Tons)	208/230 (3 phase)	Std	187	254	16.2	96	3.0	5.8	57	45 3/45 3	50/50	47/47	251/251
	460 (3 phase)	Std	414	508	8.0	46	1.5	2.6	30	22 1	25	23	122
	575 (3 phase)	Std	518	632	6.1	44	1.5	2.6	30	17 0	20	18	112
		Alt											
150 (12½ Tons)	208/230 (3 phase)	Std	187	254	19.2	110	3.0	5.8	57	52 0/52.0	60/60	54/54	279/279
		Alt						7.5		53.7/53 7	60/60	56/56	238/238
	460 (3 phase)	Std	414	508	9.6	55	1.5	2.6	30	25.7	30	27	140
		Alt						3.4		26.5	30	28	149
150 (12½ Tons)	575 (3 phase)	Std	518	632	8.3	45	1.5	2.6	30	22.0	25	22	114
		Alt						3.4		22.6	25	24	121
	208/230 (3 phase)	Std	187	254	22.3	142	3.0	12.0	57	65.2/65 2	80/80	69/69	386/386
		Alt						15.0		68 2/68.2	80/80	72/72	410/410
150 (12½ Tons)	460 (3 phase)	Std	414	508	10.4	72	1.5	5.4	30	30.3	35	32	195
		Alt						7.5		32.4	35	34	207
	575 (3 phase)	Std	518	632	9.6	58.5	1.5	5.4	30	27 1	35	28	158
		Alt						7.5		28 8	35	30	167

(See next page for legend and notes.)

## ELECTRICAL DATA — 579E180,216 AND 579F240,300

UNIT 579	NOMINAL VOLTAGE (60 Hz)	IFM TYPE	VOLTAGE RANGE		COMPRESSOR				OFM		IFM		COMBUSTION FAN MOTOR††	POWER SUPPLY	
			Min	Max	No. 1	No. 2	RLA	LRA	Quantity	FLA (ea)	Hp*	FLA	FLA	MCA	MOCPT
E180	208/230 (3 phase)	Std	187	254	61.0	266	—	—	2	5.4	3.0	10.5/10.5	90	98/98	150/150
		Alt		414	508	28.6	120	—	—	2	2.7	3.7	12.0/12.0	90	99/99
E216, F240	460 (3 phase)	Std	187	254	34.5	239	28.3	205	2	5.5	3.0	4.8	57	46	70
		Alt		414	508	17.0	119	14.4	104	2	2.8	3.7	5.0	57	46
F300	208/230 (3 phase)	Std	187	254	43.6	228	—	—	2	5.5	5	16.7/15.2	57	99/98	125/125
		Alt		414	508	22.1	114	—	—	2	2.8	7½**	24.2/22.0	57	107/104
F300	460 (3 phase)	Std	187	254	43.6	228	—	—	2	5.5	5	7.6	57	49	60
		Alt		414	508	22.1	114	—	—	2	2.8	7½**	11.0	57	52

### LEGEND

CSA	— Canadian Standards Association
FLA	— Full Load Amps
HACR	— Heating, Air Conditioning and Refrigeration
IFM	— Indoor (Evaporator) Fan Motor
LRA	— Locked Rotor Amps
MCA	— Minimum Circuit Amps
MOCPT	— Maximum Overcurrent Protection
NEC	— National Electrical Code
OFM	— Outdoor (Condenser) Fan Motor
RLA	— Rated Load Amps

\*Used to determine minimum disconnect size per NEC

†Fuse or HACR circuit breaker.

\*\*The 7½ hp motor is not available on the 579E216 units. The 5 hp motor is standard.

††The 240 and 300 high-heat units have 2 combustion-fan motors.



180 Only



036-150 Only



180-300 Only



216-300 Only

### NOTES:

- In compliance with NEC requirements for multimotor and combination load equipment (refer to NEC Articles 430 and 440), the overcurrent protective device for the unit shall be fuse or HACR breaker. CSA units may be fuse or circuit breaker.
- Unbalanced 3-Phase Supply Voltage**  
Never operate a motor where a phase imbalance in supply voltage is greater than 2%. Use the following formula to determine the percent voltage imbalance.

% Voltage Imbalance

$$= 100 \times \frac{\text{max voltage deviation from average voltage}}{\text{average voltage}}$$

Example: Supply voltage is 460-3-60

$$AB = 452 \text{ v}$$

$$BC = 464 \text{ v}$$

$$AC = 455 \text{ v}$$

$$\text{Average Voltage} = \frac{452 + 464 + 455}{3}$$

$$= \frac{1371}{3}$$

$$= 457$$

NOTE: The 575-v units are CSA only

Determine maximum deviation from average voltage

$$(AB) 457 - 452 = 5 \text{ v}$$

$$(BC) 464 - 457 = 7 \text{ v}$$

$$(AC) 457 - 455 = 2 \text{ v}$$

Maximum deviation is 7 v

Determine percent voltage imbalance

$$\% \text{ Voltage Imbalance} = 100 \times \frac{7}{457} = 1.53\%$$

This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%.

**IMPORTANT:** If the supply voltage phase imbalance is more than 2%, contact your local electric utility company immediately.

## OPERATING SEQUENCE

**COOLING, UNITS WITHOUT ECONOMIZER** — When thermostat calls for cooling, terminals G and Y1 are energized. The indoor (evaporator) fan contactor (IFC) and compressor contactor no. 1 (C1) are energized, and evaporator-fan motor, compressor no. 1 (580D036-150 and 579E216/579F240,300) or unloaded compressor (579E180), and condenser fan start. The condenser-fan motor runs continuously while unit is cooling. For units with 2 stages of cooling, if the thermostat calls for a second stage of cooling by energizing Y2, compressor contactor no. 2 (C2) is energized and compressor no. 2 starts (580D036-150 and 579E216/579F240,300) or compressor no. 1 runs fully loaded (579E180).

**HEATING, UNITS WITHOUT ECONOMIZER (580D036-150)** — When the thermostat calls for heating, terminal W1 is energized. In order to prevent thermostat short-cycling, the unit is locked into the Heating mode for at least 1 minute when W1 is energized. The induced-draft motor (IDM) is then energized and the burner ignition sequence begins. The indoor (evaporator) fan motor (IFM) is energized 45 seconds after a flame is ignited. On units equipped for two stages of heat, when additional heat is needed, W2 is energized and the high-fire solenoid on the main gas valve (MGV) is energized. When the thermostat is satisfied and W1 is deenergized, the IFM stops after a 45-second time-off delay.

**HEATING, UNITS WITHOUT ECONOMIZER (579E180,216/579F240,300)**

**NOTE:** The 579E180,216/579F240,300 units have 2 stages of heat

Turn unit power on Open manual gas line valve. Set thermostat system switch at HEAT or AUTO position and set fan switch to AUTO position for heating

First-stage thermostat calls for heat. Time-delay relay for evaporator fan begins timer sequence. Induced-draft relay closes, and induced-draft motor starts

Pressure switch closes and pilot valve no. 1 opens, allowing gas to flow to the first-stage pilot. Spark ignitor ignites pilot flame. Sensor detects flame and the main gas valve no 1 opens. Gas flows to main burners and first-stage burners ignite. Spark igniter turns off. When sequence is complete, time-delay relay closes and evaporator fans start.

**Second Stage — 579E180,216/579F240,300 Low-Heat and 579E180 High-Heat Units** — With an additional heating call, the second-stage thermostat closes. (The control relay closes during the first stage of operation.) Pilot valve no. 2 opens, and the spark ignitor ignites pilot. The sensor detects a flame and energizes main gas valve coil no. 2, opening main gas valve no 2. Gas flows to the main burners, and the second stage burners ignite. The spark ignitor turns off.

When the second-stage thermostat is satisfied, the second-stage gas valve closes.

When the first-stage thermostat is satisfied, the first-stage gas valve closes. The induced-draft motor turns off, the time relay opens, and the timer sequence begins. When the sequence is complete, the evaporator-fan motor turns off.

**Second Stage — 579F240,300 High-Heat Units** — With an additional heating call, the second-stage thermostat closes. (The control relay closes during the first stage of operation.) The second-stage induced-draft relay closes, and the second-stage induced-draft motor starts

The second-stage pressure switch closes and pilot valve no. 2 opens, allowing gas to flow to the second-stage pilot. Spark ignitor ignites pilot flame. The sensor detects the flame, and main gas valve no. 2 opens. Gas flows to main burners and second-stage burners ignite. Spark ignitor turns off.

When the second-stage thermostat is satisfied, the second-stage gas valve closes and the second-stage induced-draft motor turns off.

When the first-stage thermostat is satisfied, the first-stage gas valve closes. The first-stage induced-draft motor turns off, the time relay opens, and the timer sequence begins. When the sequence is complete, the evaporator-fan motor turns off.

**COOLING, UNITS WITH ECONOMIZER (580D036-150)** — When the outdoor-air temperature is above the OAT (outdoor-air thermostat) setting and the room thermostat calls for cooling, compressor contactor no. 1 is energized to start compressor no. 1 and the outdoor (condenser) fan motor (OFM). The indoor (evaporator) fan motor (IFM) is energized and the economizer damper moves to the minimum position. Upon a further call for cooling, compressor contactor no. 2 will be energized, starting compressor no. 2. After the thermostat is satisfied, the damper moves to the fully closed position when using an auto fan or to the minimum position when using a continuous fan.

When the outdoor-air temperature is below the OAT setting and the thermostat calls for cooling, the economizer dampers move to the minimum position. If the supply-air temperature is above 57 F, the damper continues to open until it reaches the fully open position or until the supply-air temperature drops below 52 F.

When the supply-air temperature falls to between 57 F and 52 F, the damper will remain at an intermediate open position. If the supply-air temperature falls below 52 F, the damper will modulate closed until it reaches the minimum position or until the supply-air temperature is above 52 F. When the thermostat is satisfied, the damper will move to the fully closed position when using an auto fan or to the minimum position when using a continuous fan.

If the outdoor air alone cannot satisfy the cooling requirements of the conditioned space, economizer cooling is integrated with mechanical cooling, providing second-stage cooling. Compressor no. 1 and the condenser fan will be energized and the position of the economizer damper will be determined by the supply-air temperature. Compressor no. 2 is locked out.

When the second stage of cooling is satisfied, the compressor and OFM will be deenergized. The damper position will be determined by the supply-air temperature

After a 30-second delay, the IFM shuts off. If the thermostat fan selector switch is in the ON position, the IFM will run continuously.

**COOLING, UNITS WITH ECONOMIZER (579E180,216/579F240,300)** — Upon a call for cooling, when outdoor ambient is above the enthalpy control setting, the economizer damper moves to VENT position. The compressor(s) and evaporator and condenser fans energize.

Upon a first call for cooling, when outdoor ambient is below the enthalpy control setting, the evaporator fan starts and the economizer is fully open. The compressor(s) remains off.

Upon a second-stage call for cooling, compressor no. 1 is energized and mechanical cooling is integrated with economizer cooling. If the outdoor-air temperature drops below 50 F, a cooling lockout switch prevents the compressors from running.

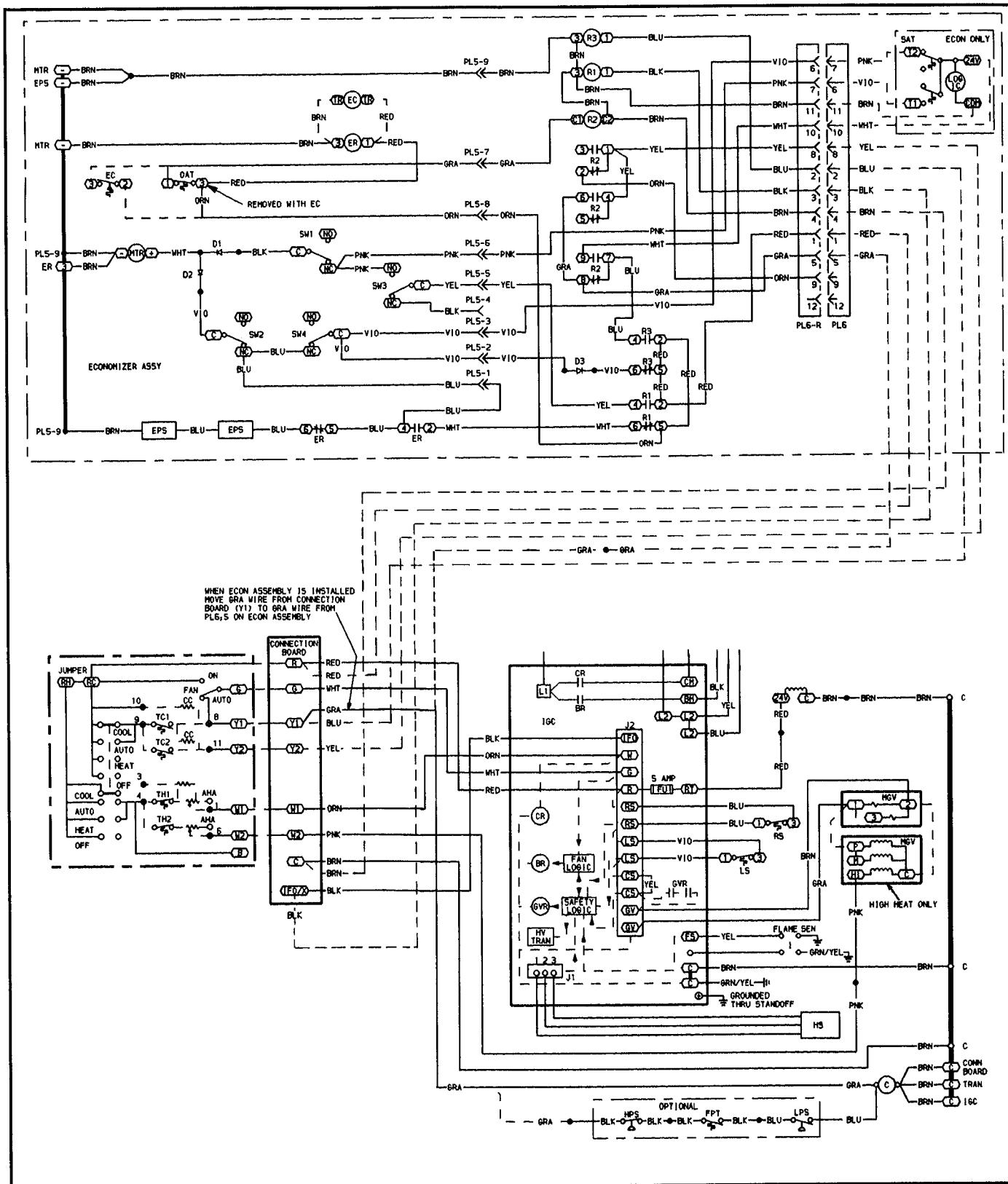
When supply-air temperature drops below a fixed set point, the economizer damper modulates to maintain the temperature at the fixed set point.

A freeze protection thermostat (FPT) is located on the evaporator coil. It detects frost build-up and turns off the compressors, allowing the coil to clear. Once frost has melted, the compressors can be reenergized.

**HEATING, UNITS WITH ECONOMIZER (580D036-150)** — When the thermostat calls for heating, terminal W1 is energized. In order to prevent thermostat short-cycling, the unit is locked into the Heating mode for at least 1 minute when W1 is energized. The induced-draft motor is then energized and the burner ignition sequence begins. The indoor (evaporator) fan motor (IFM) is energized 45 seconds after a flame is ignited and the damper moves to the minimum position. On units equipped for two stages of heat, when additional heat is needed, W2 is energized and the high-fire solenoid on the main gas valve (MGV) is energized. When the thermostat is satisfied and W1 is deenergized, the IFM stops after a 45 second time-off delay. The economizer damper then moves to the fully closed position. When using continuous fan, the damper will remain in the minimum position.

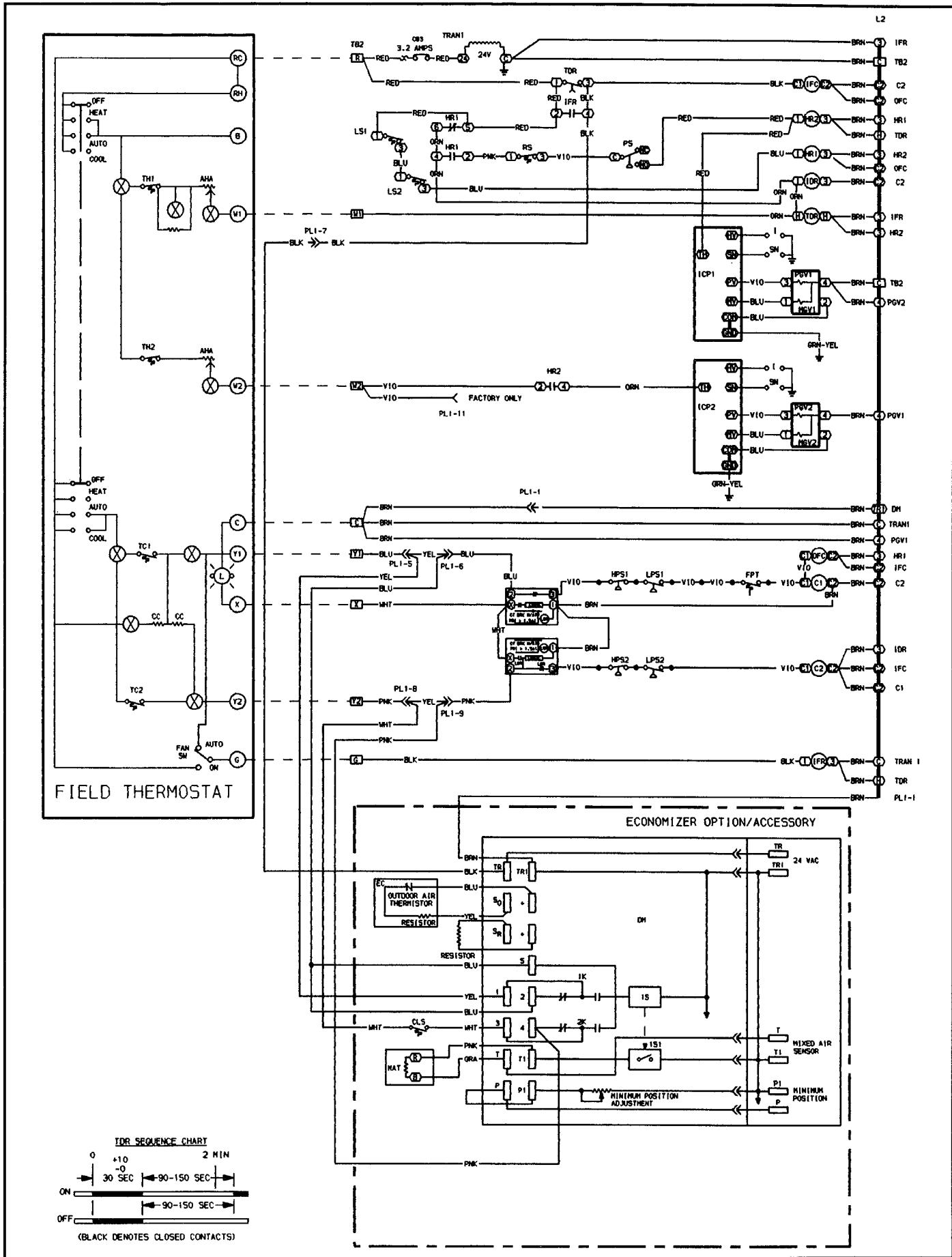
**HEATING, UNITS WITH ECONOMIZER (579E180,216/579F240,300)** — Outdoor-air damper stays at VENT position while evaporator fan is operating.

TYPICAL WIRING SCHEMATIC – 580D036-150



See Legend on page 44.

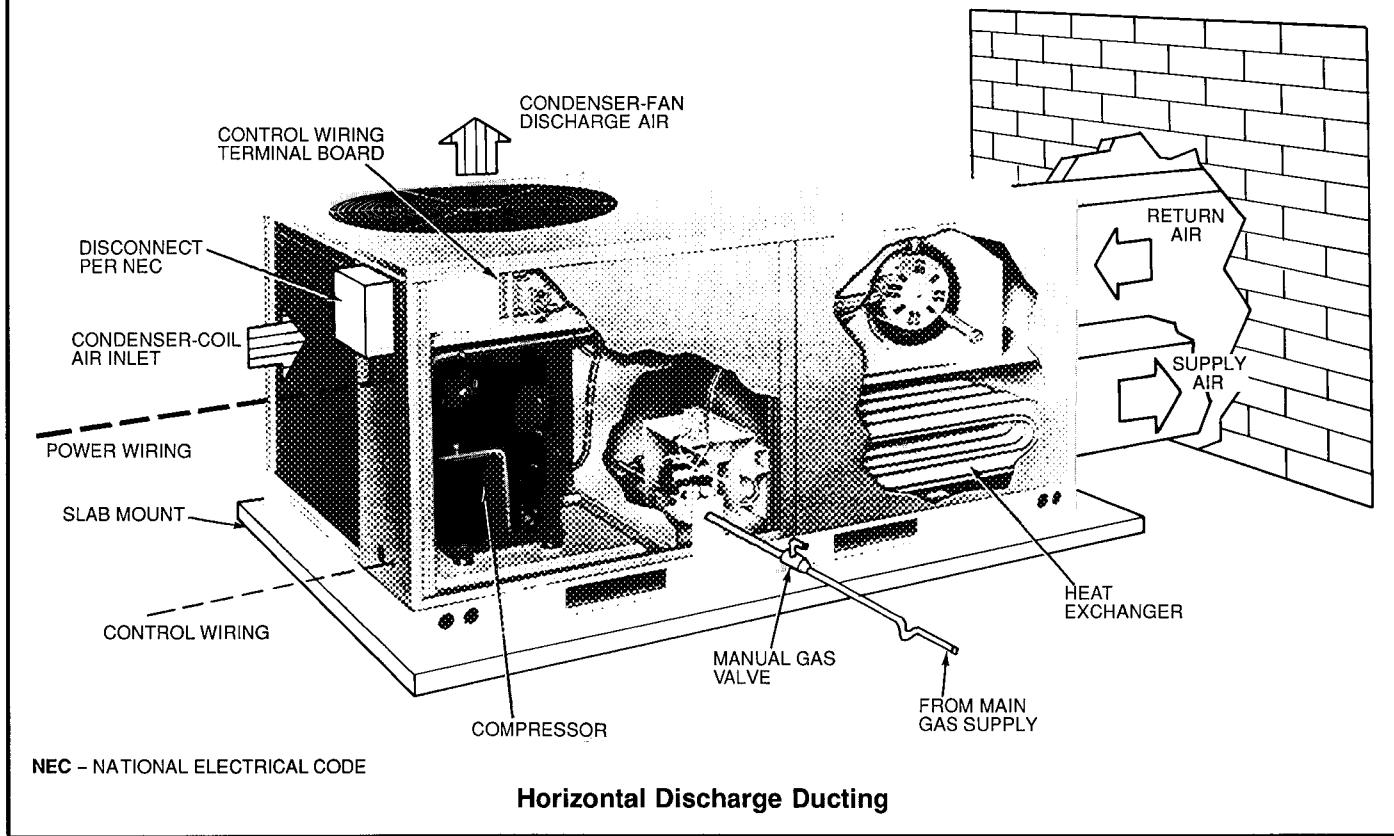
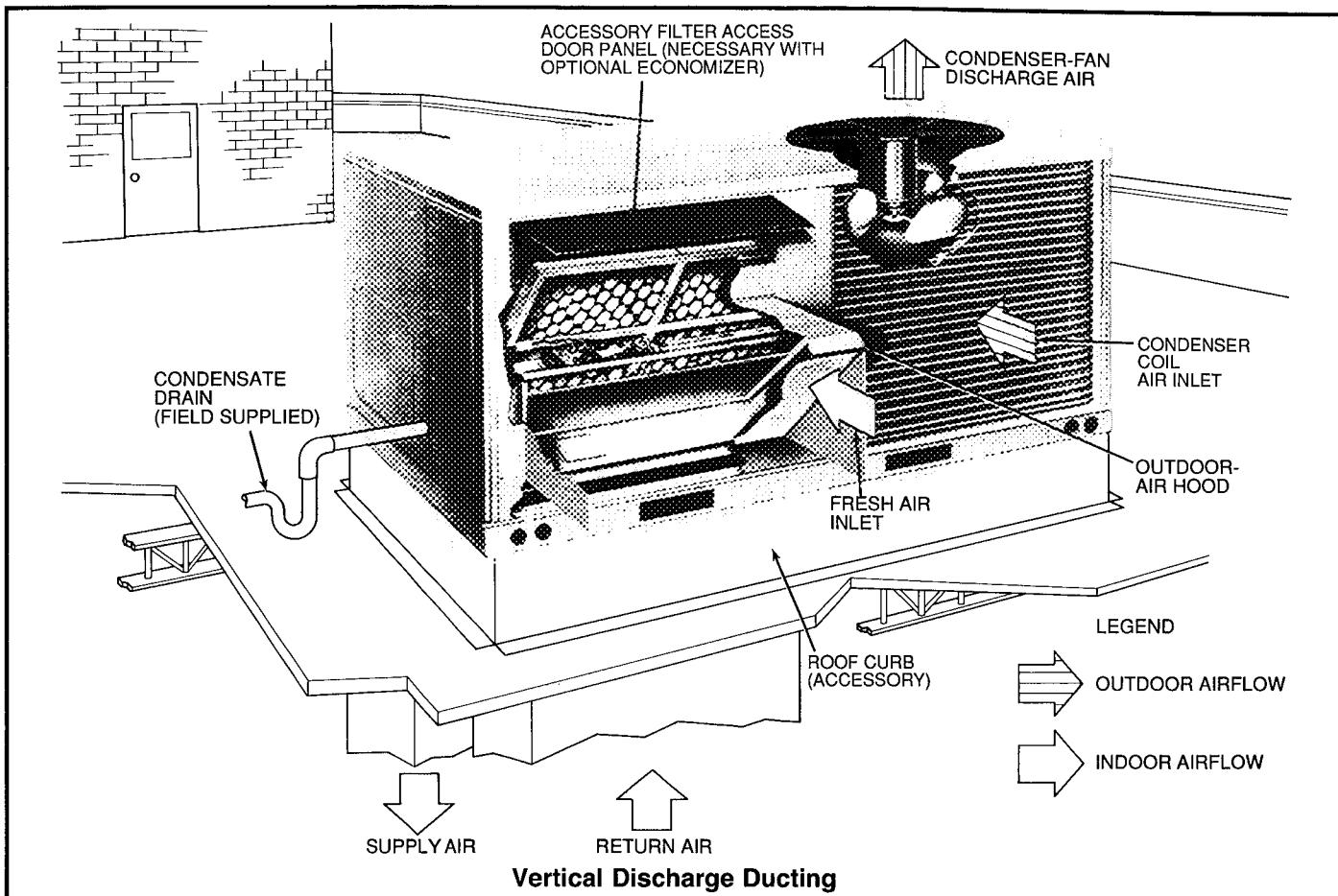
TYPICAL WIRING SCHEMATIC — 579E180,216 AND 579F240,300



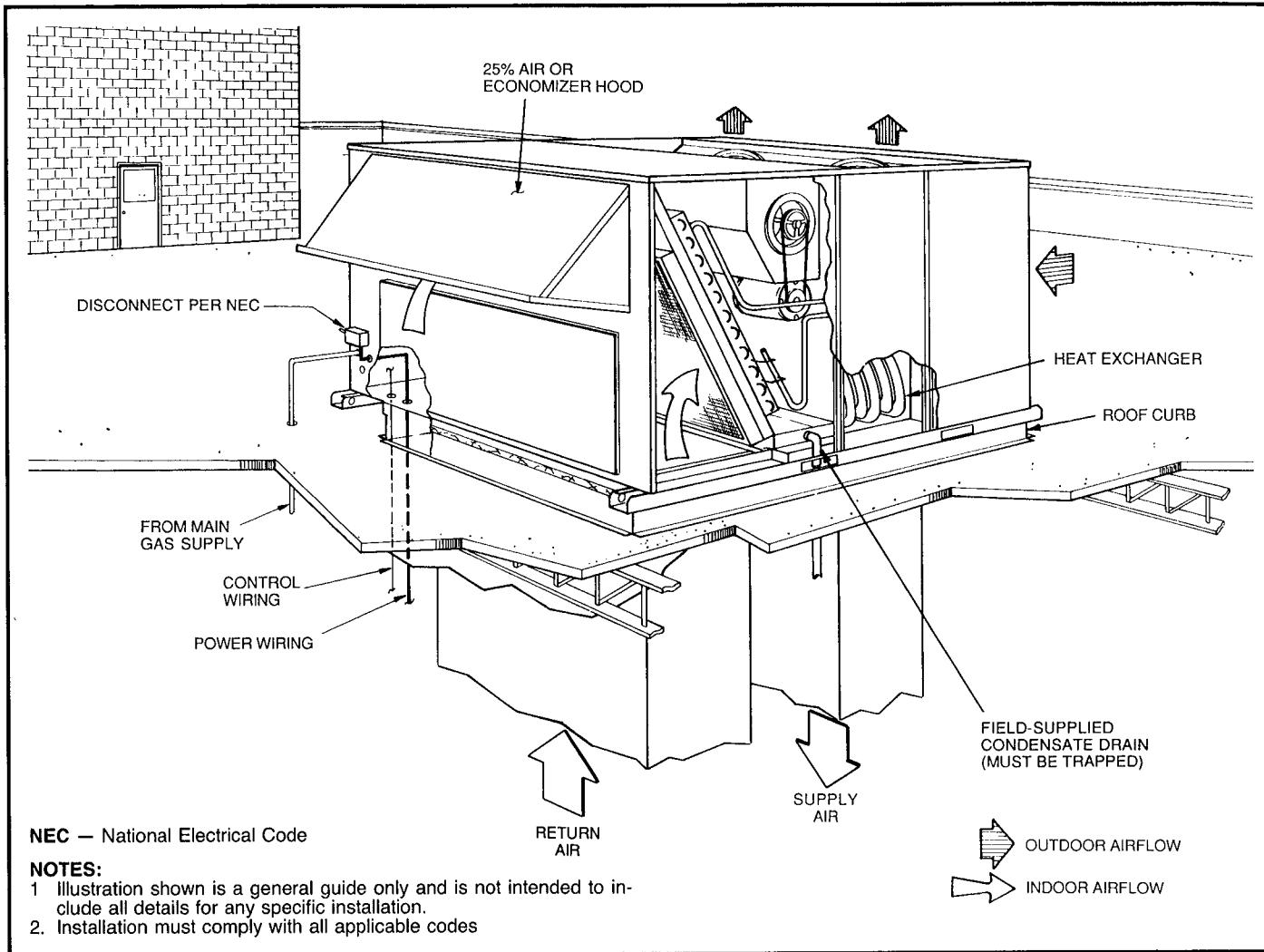
## LEGEND FOR TYPICAL WIRING SCHEMATICS

AHA	— Adjustable Heat Anticipator	IFCB	— Indoor-Fan Circuit Breaker	TC	— Thermostat Cooling
BKR W/AT	— Breaks with Amp Turns	IFM	— Indoor-Fan Motor	TDR	— Time Delay Relay
C	— Contactor, Compressor	IFR	— Indoor-Fan Relay	TH	— Thermostat Heating
CB	— Circuit Breaker	IGC	— Integrated Gas Unit Controller	TRAN	— Transformer
CC	— Cooling Compensator	IP	— Internal Protector		Terminal (Marked)
CH	— Crankcase Heater	L	— Light		
CLO	— Compressor Lockout	LOR	— Lockout Relay	○	Terminal (Unmarked)
CLS	— Compressor Lockout Switch	LPS	— Loss-of-Charge/ Low-Pressure Switch		
COMP	— Compressor Motor	LS	— Limit Switch		
CR	— Control Relay	MAT	— Mixed-Air Thermostat		
CT	— Current Transformer	MGV	— Main Gas Valve		
DM	— Damper Motor	NC	— Normally Closed		
DU	— Dummy Terminal	NO	— Normally Open		
EC	— Enthalpy Control	OAT	— Outdoor-Air Thermostat		
EQUIP	— Equipment	OFC	— Outdoor-Fan Contactor		
FPT	— Freeze Protection	OFM	— Outdoor-Fan Motor		
	Thermostat	PGV	— Pilot Gas Valve		
FU	— Fuse	PL	— Plug		
GND	— Ground	PRI	— Primary		
HPS	— High-Pressure Switch	PS	— Pressure Switch		
HR	— Heat Relay	QT	— Quadruple Terminal		
HV	— High Voltage	R	— Relay		
I	— Ignitor	RS	— Rollout Switch		
ICP	— Ignitor Control Pack	SN	— Sensor		
IDM	— Induced-Draft Motor	SW	— Switch		
IDR	— Induced-Draft Relay	TB	— Terminal Block		
IFC	— Indoor-Fan Contactor				

## TYPICAL INSTALLATION — 580D036-150



## TYPICAL INSTALLATION — 579E180,216 AND 579F240,300



## APPLICATION DATA

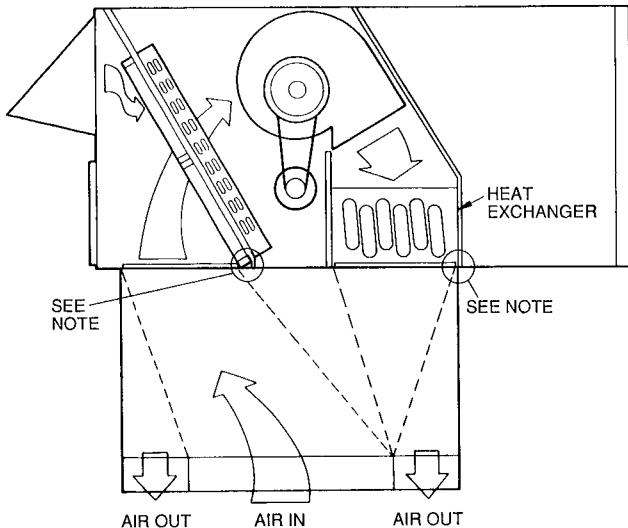
1. Ductwork (580D036-150) — Secure vertical discharge ductwork to roof curb. For horizontal discharge applications, attach ductwork to unit, or field-supplied flanges can be attached to horizontal discharge openings and all duct-work attached to flanges.
2. Ductwork (579E180,216 and 579F240,300) — Ductwork should be attached to the curb on all units. Interior installation may proceed before unit is set in place on roof. If ductwork will be attached to the unit, do not drill in condensate drain pan area — leaks may result. See figures on page 48 for information on field-installed concentric duct-work when applicable.
3. To Convert from Vertical Discharge to Horizontal Discharge (580D036-150):
  - A. Remove economizer to gain access to return duct opening
  - B. Move the horizontal discharge duct opening covers to the vertical discharge openings
  - C. Rotate economizer 90 degrees (until the economizer motor faces the condenser section).
  - D. Rotate the barometric relief damper 90 degrees (economizer only).
  - E. Install block-off plate over the opening on the access panel.
- IMPORTANT:** On 580D036-150 horizontal discharge units equipped with economizer, the air filters MUST be installed external to the unit, or economizer will have to be partially removed.
4. Thru-The-Curb Service Connections — Roof curb connections allow field power wires, control wires, and gas supply to enter through the roof curb opening.
5. Thermostat — Use of 2-stage cooling thermostat is recommended for all units. A 2-stage cooling thermostat is required on units with accessory economizer to provide integrated cooling.
6. Heating-to-Cooling Changeover — All units are automatic changeover from heating to cooling when automatic changeover thermostat and subbase are used.
7. Airflow — Units are draw-thru on cooling and blow-thru on heating.
8. Maximum Airflow — To minimize the possibility of condensate blow-off from evaporator, airflow through units should not exceed 500 cfm/ton on 036-240 units, and 11,250 cfm on 300 units.
9. Minimum Airflow — The minimum airflow for cooling is 300 cfm/ton.
10. Minimum Ambient Cooling Operation Temperature (580D036-150) — The cooling temperature for size 036-150 standard units is 25 F. With accessory low-ambient kit, units can operate at outdoor temperatures down to -20 F.
11. Minimum Ambient Cooling Operation Temperature (180-300) — Units are designed to operate at outdoor temperatures down to 40 F for 579E180, 25 F for 579E216 and 579F240, and 48 F for 579F300. To operate at lower outdoor-air temperatures, accessory outdoor-air thermostat or outdoor-air thermostat and accessory low ambient kit are required. See Minimum-Ambient Temperature Cooling Operation table below for operating limits.
12. Maximum Operating Outdoor-Air Temperature — For cooling, this temperature is 115 F.
13. High Altitude — A change to the gas orifice may be required at high altitudes. Refer to Altitude compensation charts on page 49.
14. Minimum Temperature — Air entering the heat exchanger in heating is 50 F continuous and 45 F intermittent.
15. Internal Unit Design — Due to the internal design (draw-thru over the motor), air path, and specially designed motors, the full horsepower (maximum continuous bhp) listed in the Specifications table and the notes following each Air Delivery table can be utilized with extreme confidence. Using the motors with the values listed in the Specifications and Air Delivery tables *will not* result in nuisance tripping or premature motor failure. The unit warranty will not be affected.

### MINIMUM-AMBIENT TEMPERATURE COOLING OPERATION

UNIT	OUTDOOR COOLING TEMPERATURE (F)		
	Base Unit	With Accessory OAT	With Accessory OAT and Low-Ambient Kit
579E180	40	25	-20
579E216, 579F240	25	—	-20
579F300	48	35	-20

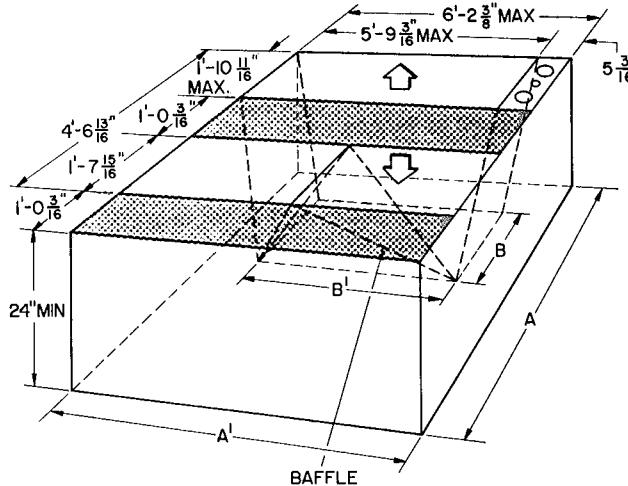
OAT — Outdoor-Air Thermostat

### CONCENTRIC DUCT AIR DISTRIBUTION



**NOTE:** Do not drill in this area; damage to basepan may result in water leak.

### CONCENTRIC DUCT DETAILS



**NOTE:** Dimensions A, A' and B, B' are obtained from field-supplied ceiling diffuser

Shaded area indicates block-off panels.

### MOTOR LIMITATIONS

UNIT	EVAPORATOR-FAN MOTOR	MAXIMUM ACCEPTABLE OPERATING HP
580D036	Standard	0.34
	Alternate	0.66
580D048	Standard	0.81
	Alternate	1.20
580D060	Standard	1.19
	Alternate	1.80
580D072	Standard	2.40
580D090	Standard	2.40
580D102	Standard	2.40
580D120	Standard	2.40
	Alternate	2.90
580D150	Standard	4.20
	Alternate	5.25
579E180	Standard	3.45
	Alternate	4.25
579E216	Standard	5.90
579F240	Standard	5.90
	Alternate	8.70 (208/230 v), 9.50 (460 v)
579F300	Standard	8.70 (208/230 v), 9.50 (460 v)
	Alternate	10.20 (208/230 v), 11.80 (460 v)

**NOTE:** Extensive motor and electrical testing on these units ensures that the full horsepower range of the motor can be utilized with confidence. Using your fan motors up to the horsepower ratings shown in this table will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.

### OPTION AND ACCESSORY LIST

ITEM	FACTORY-INSTALLED OPTION	FIELD-INSTALLED ACCESSORY
Integrated Economizer	X	X
Manual Outdoor-Air Damper	X	X
Filter Door Access Panel Kit (036-150)	X	X
Controls Upgrade Kit (036-150)	X	X
Condenser Coil Grille (036-150)	X	
Alternate Drive (090)	X	
Alternate Motor and Drive (036-060, 120-180, 240, 300)	X	
Two-Position Damper		X
Barometric Relief Damper (180-300)		X
Roof Curb		X
Thermostat and Subbase		X
Power Exhaust (180-300)		X
Outdoor-Air Thermostat (180-300)		X
Low-Ambient Kit		X
Time Guard® II Control Circuit		X
Roof-Curb Service Connections (036-150)		X
Enthalpy Control		X
Differential Enthalpy Control		X
Condenser Coil Hall Guard Assembly (036-150)		X
Retro Power Pack (036-150)		X
LP (Liquid Propane) Conversion Kit (036-150)		X
Flue Shield (036-150)		X
NO <sub>x</sub> Reduction Kit (036-150)		X

### ALTITUDE COMPENSATION\* — 580D036-072

ELEVATION (Ft)	74,000 AND 115,000 BTUH NOMINAL INPUT		150,000 BTUH NOMINAL INPUT	
	Natural Gas Orifice Size†	Liquid Propane Orifice Size†	Natural Gas Orifice Size†	Liquid Propane Orifice Size†
0-2,000	33	43	30	38
2,000	34	43	30	39
3,000	35	44	31	40
4,000	36	44	32	41
5,000	36	44	33	42
6,000	37	45	34	43
7,000	37	45	35	43
8,000	38	46	36	44
9,000	39	47	37	44
10,000	41	48	38	45
11,000	43	48	39	45
12,000	44	49	40	46
13,000	44	49	41	47
14,000	45	50	42	47

\*As the height above sea level increases, there is less oxygen per cubic foot of air. Therefore, heat input rate should be reduced at higher altitudes.

†Orifices available through your local distributor.

### ALTITUDE COMPENSATION\* — 580D090-150

ELEVATION (Ft)	125,000, 180,000, AND 220,000 BTUH NOMINAL INPUT		250,000 BTUH NOMINAL INPUT	
	Natural Gas Orifice Size†	Liquid Propane Orifice Size†	Natural Gas Orifice Size†	Liquid Propane Orifice Size†
0-2,000	31	41	30	38
2,000	32	42	30	39
3,000	32	42	31	40
4,000	32	42	32	41
5,000	33	43	33	42
6,000	34	43	34	43
7,000	35	44	35	43
8,000	36	44	36	44
9,000	37	45	37	44
10,000	38	46	38	45
11,000	39	47	39	45
12,000	40	47	40	46
13,000	41	48	41	47
14,000	42	48	42	47

\*As the height above sea level increases, there is less oxygen per cubic foot of air. Therefore, heat input rate should be reduced at higher altitudes.

†Orifices available through your local distributor.

### ALTITUDE COMPENSATION\* — 579E180,216 AND 579F240,300

ELEVATION (Ft)	NATURAL GAS Orifice Size†
0-2,000	33
2,000	35
3,000	35
4,000	36
5,000	36
6,000	37
7,000	38
8,000	38
9,000	40
10,000	41
11,000	43
12,000	44
13,000	44
14,000	45

\*As the height above sea level increases, there is less oxygen per cubic foot of air. Therefore, heat input rate should be reduced at higher altitudes

†Orifices available through your distributor

### ALTITUDE DERATING FACTOR\* — 036-300

ELEVATION (Ft)	MAXIMUM HEATING VALUE (Btu/ft <sup>3</sup> )
0-2,000	1,100
2,001-3,000	1,050
3,001-4,000	1,000
4,001-5,000	950
5,001-6,000	900

\*Derating of the unit is not required unless the heating value of the gas exceeds the values listed in the table above, or if the elevation exceeds 6000 ft. Derating conditions must be 4% per thousand ft above sea level. For example, at 4000 ft, if the heating value of the gas exceeds 1000 Btu/ft<sup>3</sup>, the unit will require a 16% derating. For elevations above 6000 ft, the same formula applies. For example, at 7000 ft, the unit will require a 28% derating of the maximum heating value per the National Fuel Gas Code.

## ENGINEERS' SPECIFICATION GUIDE — MODELS 580D036-150 (3 TO 12½ TONS)

**GENERAL:** Furnish and install single-package, outdoor rooftop-mounted, electrically controlled, heating and cooling unit utilizing a reciprocating compressor for cooling and gas combustion for heating duty. Unit shall discharge supply air vertically or horizontally as shown on the contract drawings.

Nominal unit electrical characteristics shall be \_\_\_\_\_ v, \_\_\_\_\_ ph, 60 Hz. The unit shall be capable of satisfactory operation within voltage limits of \_\_\_\_\_ v to \_\_\_\_\_ v.

**COOLING CAPACITY:** Total cooling capacity of the unit shall be \_\_\_\_\_ Btuh or greater, and sensible capacity shall be \_\_\_\_\_ Btuh or greater at conditions of \_\_\_\_\_ cfm evaporator air entering at unit at \_\_\_\_\_ F dry bulb, \_\_\_\_\_ F wet bulb and condenser entering air of \_\_\_\_\_ F dry bulb. Total design conditions shall be a minimum of \_\_\_\_\_ Btuh/Watt. The unit shall be capable of cooling operation down to 25 F.

**HEATING CAPACITY:** Total heating capacity of the unit shall be \_\_\_\_\_ Btuh or greater with a gas input of \_\_\_\_\_ Btuh.

**CABINET:** The cabinet shall be constructed of galvanized steel, bonderized and coated with a prepainted, baked enamel finish.

**COMPRESSOR:** Compressor shall be fully-hermetic type with suitable vibration isolators.

**CONDENSER SECTION:** The condenser coils shall have aluminum plate fins mechanically bonded to seamless copper tubes with all joints brazed. Condenser fan shall be direct-driven propeller type and shall discharge air vertically. Fan shall have permanently lubricated bearings.

**EVAPORATOR SECTION:** Evaporator coils shall have aluminum plate fins mechanically bonded to seamless copper tubes with all joints brazed. Evaporator fan shall be direct drive with 2 or 3 speeds, or belt drive as shown on the equipment drawings. Belt drive shall include an adjustable-pitch motor pulley. Motor bearings shall be sealed, permanently lubricated, ball-bearing type.

**HEATING SECTION:** The unit shall be equipped with an induced-draft combustion system with energy saving direct spark ignition and redundant main gas valve. The heat exchanger shall be of the tubular section type constructed of a minimum of 20-gage steel coated with a nominal 1.2 mil aluminum-silicone alloy for corrosion resistance. Burners shall be of the in-shot type constructed of aluminum coated steel.

**REFRIGERANT SYSTEM:** Refrigerant system shall include strainer assembly, fixed orifice feed system, and service gage

connections on suction line, liquid line, and compressor discharge line, as well as internal loss-of-charge protection and high-pressure relief.

**FILTER SECTION:** Filter section shall consist of factory-installed low velocity, 2-in. thick fiberglass throwaway filters of commercially available sizes. Filter access panel shall be easy access or hinged, if equipped with manual or two-position damper or economizer.

**CONTROLS:** Unit shall be complete with self-contained low-voltage control circuit. Safeties shall include compressor over-temperature and overcurrent

Heating section shall be provided with the following minimum protection: High temperature limit switch, induced-draft motor speed sensor, flame rollout switch, and flame proving controls.

**OPTIONS:** Factory-installed integrated economizer shall include all hardware and controls to provide cooling using outdoor air alone or in conjunction with mechanical cooling. Dampers shall be low leakage type, not to exceed 2% leakage at 1.0 in. wg pressure differential. Economizer shall be capable of introducing up to 100% outdoor air and shall be equipped with a gravity relief damper. Economizer controls shall be dry-bulb type.

Other factory-installed options shall include: 25% manual outdoor-air damper, controls kit, filter access door panel kit, condenser coil grille, and alternate evaporator-fan motors and/or drives

**APPROVALS:** The unit shall be CSA design certified and UL tested and certified. All wiring shall be in accordance with NEC and units shall meet ASHRAE standard 62. The unit shall be rated in accordance with ARI Standards 210/240 or 360 and 270. Units shall be designed to conform to NRCA standards. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.

**ACCESSORIES:** Field-installed accessories shall include: Roof curb (14 in. or 24 in.), roof curb electrical and gas utility connections, two-position damper, 25% manual outdoor-air damper, low ambient kit, remote control panel, Time Guard® short-cycle circuit protection, LP (liquid propane) conversion kit, thermostats and subbases, flue hood protector, condenser coil hail guard, NO<sub>x</sub> reduction kit, retro power pack, filter access door panel kit, controls upgrade kit, condenser coil grille, and enthalpy control.

## ENGINEERS' SPECIFICATION GUIDE — MODELS 579E180,216/579F240,300 (15 TO 25 TONS)

**GENERAL:** Furnish and install single-package, outdoor rooftop-mounted, electrically controlled, heating and cooling unit utilizing reciprocating compressor(s) for cooling and gas combustion for heating duty. Unit shall discharge supply air vertically or horizontally as shown on the contract drawings.

Nominal unit electrical characteristics shall be \_\_\_\_\_ v, 3 ph, 60 Hz. The unit shall be capable of satisfactory operation within voltage limits of \_\_\_\_\_ v to \_\_\_\_\_ v.

**COOLING CAPACITY:** Total cooling capacity of the unit shall be \_\_\_\_\_ Btuh or greater, and sensible capacity shall be \_\_\_\_\_ Btuh or greater at conditions of \_\_\_\_\_ cfm evaporator air entering at unit at \_\_\_\_\_ F dry bulb, \_\_\_\_\_ F wet bulb and condenser entering air of \_\_\_\_\_ F dry bulb. Total design conditions shall be a minimum of \_\_\_\_\_ Btuh/Watt.

**HEATING CAPACITY:** Total heating capacity of the unit shall be \_\_\_\_\_ Btuh or greater with a gas input of \_\_\_\_\_ Btuh.

**CABINET:** The cabinet shall be constructed of galvanized steel, bonderized and coated with a prepainted, baked enamel finish.

**COMPRESSOR:** Compressor(s) shall be of the fully- or semi-hermetic type with crankcase heaters (180 and 300) and suitable vibration isolators and dual independent refrigeration circuits shall be supplied (216-300).

**CONDENSER SECTION:** The condenser coils shall have aluminum plate fins mechanically bonded to seamless copper tubes with all joints brazed. Condenser fan shall be of the direct-driven propeller type and shall discharge air vertically. Fan shall have permanently lubricated bearings.

**EVAPORATOR SECTION:** Evaporator coils shall have aluminum plate fins mechanically bonded to seamless copper tubes with all joints brazed. Evaporator fan shall be belt driven as shown on the equipment drawings. Bearings shall be sealed, permanently lubricated, ball-bearing type.

**HEATING SECTION.** The unit shall be equipped with an induced-draft combustion system with energy saving intermittent spark ignition and redundant main gas valve. The heat exchanger shall be of the tubular section type constructed of a minimum of 20-gage steel coated with a nominal 1.2 mil aluminum-silicone alloy for corrosion resistance. Burners shall be of the in-shot type constructed of aluminum coated steel.

**REFRIGERANT SYSTEM:** Refrigerant system shall include filter drier, fixed orifice feed system, and service gage connections on suction line, liquid line, and compressor discharge line, as well as low-pressure and high-pressure protection.

**FILTER SECTION:** Filter section shall consist of factory-installed low velocity, 2-in. thick fiberglass throwaway filters of commercially available sizes. Filter access panel shall be easy access.

**CONTROLS:** Unit shall be complete with self-contained low-voltage control circuit. Safeties shall include compressor over-temperature and overcurrent.

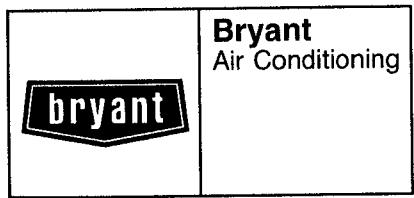
Heating section shall be provided with the following minimum protection: High temperature limit switch, induced-draft pressure switch, manual reset flame rollout switch and flame proving controls.

**OPTIONS:** Factory-installed integrated economizer shall include all hardware and controls to provide cooling using outdoor air alone or in conjunction with mechanical cooling. Dampers shall be low leakage type, not to exceed 2% leakage at 1.0 in. wg pressure differential. Economizer shall be capable of introducing up to 100% outdoor air and shall be equipped with a gravity relief damper. Economizer controls shall be dry-bulb type.

Other factory-installed options shall include: alternate evaporator-fan motors and drives.

**APPROVALS:** The unit shall be CSA or Warnock Hersey design certified and ETL or UL tested and certified. All wiring shall be in accordance with NEC and units shall meet ASHRAE Standard 62. The unit shall be rated in accordance with ARI Standards 360 and 270. Units shall be designed to conform to NRCA standards. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.

**ACCESSORIES:** Field-installed accessories shall include: Roof curb (14 in. or 24 in.), two-position damper, low-ambient kit, remote control panel, Time Guard® short-cycle circuit protection, thermostat and subbase, electronic programmable thermostat, barometric relief damper, power exhaust, outdoor-air thermostat, and economizer enthalpy control.



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE  
UNIT MUST BE INSTALLED IN ACCORDANCE  
WITH INSTALLATION INSTRUCTIONS